

Aëtiana

Volume Two

The Compendium

# Philosophia Antiqua

A Series of Studies on Ancient Philosophy

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VOLUME 114

# Aëtiana

The Method and Intellectual Context  
of a Doxographer

VOLUME TWO  
The Compendium

*By*  
J. Mansfeld and D.T. Runia

*Part One*



BRILL

LEIDEN • BOSTON  
2009

This book is printed on acid-free paper.

Library of Congress Cataloging-in-Publication Data

LCCN: 96042463

ISSN 0079-1687

ISBN 978 90 04 17356 9 (part 1)

ISBN 978 90 04 17206 7 (set)

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PRINTED IN THE NETHERLANDS

*This book is dedicated to the memory of*

*Margot Mansfeld*

*Klaas Runia*



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## SIGLA AND ABBREVIATIONS

### 1. *Ancient authors*

A	Aëtius
Ach	Achilles <i>Isagoge</i>
AD	Arius Didymus
D.L.	Diogenes Laertius
<i>Dox. Pasq.</i>	<i>Doxographica Pasquali</i>
E	Eusebius, <i>Praeparatio evangelica</i>
G	Ps.Galen, <i>Historia philosopha</i>
N	Nemesius, <i>De natura hominis</i>
P	Ps.Plutarch, <i>Placita philosophorum</i> (Byzantine mss.)
P <sup>1</sup> , P <sup>2</sup>	variant textual readings in P's mss. (P <sup>1</sup> generally the majority reading)
ϣ	Ps.Plutarch and his tradition (EGQ etc.)
pap	papyrus
Q	Qustā Ibn Lūqā
S	Stobaeus, <i>Eclogae physicae</i>
Sch	Scholia
T	Theodoret, <i>Graecarum affectionum curatio</i>

### 2. *Critical texts used for witnesses to A and his tradition (for full details see the bibliography)*

Ach	Maass, Di Maria (both cited because of the inaccessibility of the latter text)
Cyril	Burgière & Évieux
<i>Dox. Pasq.</i>	Pasquali
E	Mras
G	Diels
Lydus	Wuensch
P	Mau & Lachenaud (Mau generally the starting-point)
Philo	Cohn-Wendland

Q	Daiber
S	Wachsmuth
Scholia Aratea	Maass
<i>Str.</i>	ps.Plu. <i>Stromateis</i> at Eus. <i>P.E.</i> 1.8
T	Raeder

### 3. *Modern works*

<i>CPF</i>	Adorno, <i>Corpus dei Papiri Filosofici Greci e Latini</i>
<i>DG</i>	Diels, <i>Doxographi Graeci</i>
C–W	Cohn–Wendland, <i>Philo</i>
DK	Diels–Kranz
<i>DPhA</i>	Goulet, <i>Dictionnaire des philosophes antiques</i>
E.–K.	Edelstein–Kidd, <i>Posidonius</i>
<i>FDS</i>	Hülser, <i>Die Fragmente zur Dialektik der Stoiker</i>
<i>FGrH</i>	Jacoby, <i>Fragmente der griechischen Historiker</i>
<i>HLL</i>	Herzog, <i>Handbuch der lateinischen Literatur der Antike</i>
L&S	Long and Sedley, <i>The Hellenistic Philosophers</i>
Lampe	Lampe, <i>A Patristic Greek Lexicon</i>
LSJ	Liddell, Scott and Jones, <i>A Greek-English Lexicon</i>
<i>PG</i>	Migne, <i>Patrologia graeca</i>
<i>PL</i>	Migne, <i>Patrologia latina</i>
<i>PPF</i>	Diels, <i>Poetarum philosophorum fragmenta</i>
<i>RE</i>	<i>Real-Enzyklopädie der classischen Altertumswissenschaft</i>
SC	Sources Chrétiennes
<i>SVF</i>	<i>Stoicorum veterum fragmenta</i>
<i>TGF</i>	<i>Tragicorum graecorum fragmenta</i>
<i>TLG</i>	<i>Thesaurus Linguae Graecae</i>
<i>VS</i>	Diels–Kranz, <i>Die Fragmente der Vorsokratiker</i>

### 4. *Special terminology (not italicised in text)*

doxa, doxai	δόξα, δόξαι, tenet(s), view(s), opinion(s)
diaeresis	διαίρεσις, division (of opinions)
diaphonia	διαφωνία, opposition or conflict (of opinions)

## INTRODUCTION

The aim of the present volume, the second of our series of *Aëtiana*, is twofold, and for this reason we have divided it into two more or less separate parts. The volume comprises the outcomes of the two investigations announced in the Introduction to Volume I, published in 1997. Part I of Volume II is the successor to the chapters dealing with the compendium in the ‘Prolegomena’ of Diels’ *Doxographi Graeci* of 1879. It is a study of Aëtius’ work from a variety of angles, mostly from a literary point of view, which focuses on the composition of the tract as a whole, of its books, of the sequence of chapters within these books, and of the individual chapters themselves. What we did not foresee at the time was that this complicated inquiry would necessitate placing the compendium in the context of Stoic as well as Peripatetic (or at least Aristotelian) methodology, as well as in the general context of Hellenistic historiography of philosophy. Accordingly, what we previously believed would be the theme of *Aëtiana* Volume III, viz. the relationship of Aëtius’ work to the tradition preceding him, has to some extent come to be incorporated in the present volume.

In view of the complexity as well as the sheer extent of the material (e.g. more than 130 thematic chapters and 750 individual lemmata in Aëtius alone), the reader should obviously not expect completeness of treatment. The range of themes to be investigated is too large to be approached except through representative examples—themes such as the laconic style of the majority of Aëtian lemmata; the nature and use of quotations and references; the character and importance of authorial comments; the nature and function of chapter headings; the impact of Peripatetic and Stoic variations in the arrangement of subject-matter; the influence of *Successions* literature and of that *On Sects*; or the changes tenets—doxai—may undergo when incorporated into a dialectical context structured by means of diaereses. Nevertheless we hope that future students of Presocratic philosophy will think twice before attributing an Aëtian lemma to Theophrastus, and that students of Stoicism will similarly use more caution when expatiating on a text cited from a fragment collection. We readily admit that the material is often recondite and detailed, and that our argument is commensurately

complex. For this reason we have placed summaries of our treatment of the subject at the beginning of each section. They are intended to aid readers who are following the thread of the argument.

Diels, it will be recalled, printed ps.-Plutarch and Stobaeus, the two main sources for Aëtius, in parallel columns, and added extracts from other witnesses at the bottom of the page. In previous publications we have both published reconstructions of individual Aëtian chapters without columns. As promised, Part II of the present volume now provides the *specimen reconstructionis* of an entire book, viz. a full reconstruction of Book II of Aëtius as a single unified text. This the first time such a reconstruction has ever been attempted. David Runia completed the first draft of this fully argued reconstruction when working on the subject of doxography in Münster in 1990; now, over the past three years, this first draft has been thoroughly revised in the light of almost two decades of further joint research. Conditions for a reconstruction of Book II are relatively favourable, because this is the book for which the source material is best preserved. We now offer a separate and meticulous analysis of each chapter of Aëtius Book II, on the basis of the evidence of the main witnesses and of other sources. We evaluate the evidence supplied by each particular witness or source not only in itself but also in relation to that of the other witnesses, to evidence elsewhere in Aëtius, and to evidence found in the wider tradition. A reconstructed text—a *Lesetext* with critical apparatus and English translation—is printed at the end of each chapter. For the reader's convenience, the complete text, *Lesetext* plus translation, of Aëtius Book II is then also printed at the end of Part II. We have taken particular care to collect parallels from the wider doxographical and dialectical tradition, a generous selection from which we provide at the end of each of the chapters of Part II. These parallels do not as a rule pertain to the individual doxai but rather to the topic of the chapter as a whole and the interrelations of its lemmata. Thus Part II as well as Part I involve the wider tradition. We also offer diagrams to illustrate the diaeretic structures of the Aëtian chapters as determined in our analysis.

Apart from the usual indexes of names, concepts, and references to ancient authors (for Part I only), the present volume also contains a separate index of the doxographical-dialectical parallels adduced in Part II. Also included in Part I is a concordance of the numbering of chapters and lemmata in the three major witnesses for Aëtius' compendium, viz. ps.-Plutarch, Stobaeus, and Theodoret, together with Diels's reconstructions in *Doxographi Graeci*, and our own reconstruction (for Book II

only). We provide a collective bibliography for both Parts at the end of Part II; a list of sigla and abbreviations is located at the beginning of Part I. It includes a small number of specialized terms (*doxa/doxai*, *diaeresis*, *diaphonia*) which we have found it necessary to use frequently (and so have not italicized). They are explained in the first section of Part I.

Publication of a further volume of *Aëtiana*, which is to contain a fuller analysis of the doxographical traditions anterior to Aëtius, will be postponed.\* As we were working on the analysis of the compendium as a whole and on the reconstruction of Book II, we realized that what is now needed most of all is a reconstruction of the whole work, even though the situation for the other books is less, and sometimes much less, favourable than for Book II. We are pleased to announce that we will be joined in this challenging and laborious task by our friend and colleague Oliver Primavesi of Munich, who rightly pointed out to us the need to make Aëtius more accessible. What we plan is a *Lesetext* containing a complete edition of the five books of the compendium, accompanied by a volume of annotation explaining our choices, preferences, decisions, and hesitations.

Part I of the present volume has been written by Jaap Mansfeld, Part II by David Runia. On our collaboration, the statement in the introduction to Volume I, from 1997, is still fully applicable (p. xxi): ‘It goes without saying that we have read and commented on each other’s work on numerous occasions. [...] We have reached full agreement on all the main issues, and agreed to differ only on one or two minor points.’

The present volume appears more than ten years after its predecessor. *Non erat in votis*. The delay in publication has been caused by David Runia’s decision to move from Leiden back to Melbourne, and by events in Jaap Mansfeld’s private life. For the years 2005–2007, David received a generous grant from the Australian Research Council, which enabled him to resume work on Aëtius in collaboration with Jaap and travel to the Netherlands during the European summer for the purposes of research and consultation. Jaap travelled to Australia for two weeks in the Australian summer of 2008 to enable the two of us to begin to finalize the work. We are of course immensely grateful for

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\* We intend, however, to publish a companion volume in the near future, in which we collect together many scattered articles on the doxographical traditions that we have published during the past twenty years.

the continuous support of both persons and institutions. David wishes to express his deep appreciation to the Council of Queen's College, Melbourne, and in particular to the President of the College, Mr John Castles AM, for allowing him to spend a full day of every week on his academic research. He is also grateful to the University of Leiden for allowing him to spend three productive months as a Scaliger Fellow working in the University Library in 2007. Jaap is beholden to the Fondation Hardt and Queen's College for their hospitality, and to the Department of Philosophy of Utrecht University not only for paying a good part of his travelling costs to Australia but also, above all, for allowing him the use of a room and a computer in the years of his emeritude.

During the past few years we have presented parts of our research to patient audiences at various symposia and conferences: in the case of Jaap Mansfeld in Vandœuvres, Gargnano and Pisa; in the case of David Runia in Newcastle (Australia), Dunedin, Melbourne, Stellenbosch and Provo (Utah). We thank our hosts for their kindness. Jaap Mansfeld in particular wishes to thank Marietta Horster, Christiane Reitz, Glenn Most, Carlos Lévy, Carlos Steel; David Runia in particular wishes to thank Johan Thom and Daniel Graham. We especially wish to thank our audiences for their interest and helpful comments and suggestions. We also warmly thank friends and colleagues, including members of the board of this series and an anonymous referee, who diligently worked their way through various parts of a long manuscript and saved us from many errors. Last but certainly not least, we wish warmly to thank our former students Ivo Geradts and Johannes Rustenburg of TAT (Typographica Academica Traiectina) Zetwerk for the superb manner in which they typeset a difficult typescript. As always, final responsibility for what is offered remains firmly with the authors.

Jaap Mansfeld and David Runia  
Utrecht and Melbourne  
Autumn/Spring 2008

PART ONE

MACROSTRUCTURE AND MICROCONTEXT

Sie haben nichts zu schreiben und machen also  
*Abregés, Histoires, Vocabulaires, Esprits, Encyclopedieen,*  
u.s.w. Die Originalwerke fallen weg.

HERDER

Dass grössere Werke von anderen ausgezogen  
worden sind, ist sehr schätzenswert.

HEGEL



## I. *Strategies of Presentation*

*Summary.* In this introductory section we focus on the macrostructure of the *Placita* and the micro-environment characteristic of the majority of its individual chapters. Chapters forming a group dealing with a particular subject, such as the cosmos or the soul, follow each other in an order which corresponds more or less closely to that of the Aristotelian categories: substance, quantity, quality, place, etc. Questions of existence, or cause, are also often relevant. We give examples of arrangement according to categories as they relate both to series of chapters and to individual chapters. The individual chapter constitutes an environment for a variety of tenets arranged according to division (diaeresis) and opposition (diaphonia), with room for compromises and exceptions, just as occurs in Aristotle's dialectical overviews. The treatise is primarily systematic, not historical. References to philosophical schools and teacher-pupil relationships, however, show the influence of Hellenistic philosophical historiography.

The doxographical treatise on the doctrines of physics, synoptically reconstructed by Hermann Diels in the *Doxographi Graeci* of 1879 (hereafter *DG*) and attributed to an otherwise unknown Aëtius, comprises about 130 thematic and as a rule poly-lemmatic chapters, all with headings. In Volume I of the present study it has been demonstrated that Diels' magisterial recomposition of this subphilosophical treatise from its main sources is basically right, though it has to be revised to a not inconsiderable extent. Whether or not he was also right in attributing it to Aëtius (we believe he was) is irrelevant from the point of view of this successful restoration. The reconstructed *Placita*, as for the sake of brevity we shall call the work, is a reality, its compiler or redactor a necessary postulate. We shall go on speaking of Aëtius (hereafter A). Those who are not convinced by the attribution to A<sup>1</sup> may see this as a matter of convenience.

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<sup>1</sup> E.g. Bremmer (1998), Frede (1999), see reply by D.T. Runia (forthcoming in *Mnemosyne*). The reconstructed *Placita* are at least as certain as the so-called *Enmannsche Kaisergeschichte*, for which see Enmann (1884, published 1883, four years after the *DG*) esp. 341 and 500 on the conditions to be met when claiming a common source for several authors, and e.g. *HLL* (1989) § 536, Burgess (2005).

References to A Book II are asterisked (e.g. 2.3.1\*) and refer the reader to the

In our earlier publications we have emphasized that Diels built the structure we are merely renovating and redecorating. He anyhow remains the most important, if not the only, discussion partner and opponent where the literary and stylistic analysis of the *Placita* is concerned, as will be clear from the pages that follow.

Macrostructure and microcontext are polar terms embracing complementary aspects of the composition and methodology of this treatise. *Macrostructure* pertains to the sequence of the five books of the treatise and of themes in these books, in the latter case both taking a single book as a whole and looking at thematic groups of chapters displaying a particular pattern. Such regularities occur more than once, and in more than one book. There are further thematic parallels as well from one book forward to another and back, marked by mutually resembling chapter headings. The analysis of the introductory section to the whole work, and of the relation of mono-lemmatic or at first sight isolated chapters to what comes before and after, also belongs with the study of the macrostructure. The relation between one or more lemmata in a chapter with the theme of another chapter or chapters, or that between one or more lemmata in a chapter with particular lemmata in another chapter or chapters are also included. At 2.14.1\* for instance, in the chapter on the shapes of the stars, the Stoics are said to hold that these are 'spherical, just like the cosmos, the sun, and the moon': a clear link with the Stoic tenets at 2.2.1\*, a chapter on the cosmos, 2.22.3\*, a chapter on the sun, and 2.27.1\*, a chapter on the moon. Also note that the lemma 2.22.3\*, '... the Stoics (declare that the sun) is spherical, like the cosmos and the stars', is linked up in the same explicit way with 2.2.1\*, 'the Stoics

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*Specimen Reconstructionis* of this book in Part II of the present Volume (hereafter cited as Part II, Spec.Rec.). References to chapters plus lemmata of A Books I and III–V are according to the conventions set out Vol. 1:109–110, because these books have not yet been reconstructed: 'A at P' plus numbers of book, chapter, and lemma(ta) in P, 'A at S' plus numbers of book, chapter, and paragraph(s) as in Wachsmuth, 'A at T' plus numbers of book and chapter(s) as in Raeder. Note that our numbering of lemmata in P strictly follows P's order, so often *differs* from that of Diels who so to speak interpolates lemmata from S and T in P's sequence. Citations of individual chapters without lemmata and of multiple chapters will be by book and chapter numbers as in P. The swung dash (~) is used to indicate equivalent references, and more especially to link parallel lemmata in the sources for A, e.g. P 1.3.1 ~ S 1.10.12. In the Concordance at the end of Part I, the numberings of P, S, and T, those of Diels' reconstructed A in the *DG*, and that of A Book II\* are found in parallel columns.

(declare) that the cosmos is spherical', and 2.14.1\*, 'the Stoics (declare) that the stars are spherical, just like the cosmos, the sun, and the moon'.

*Microcontext* (more on which shortly) pertains to the diaeretic organization of the thematic poly-lemmatic chapter and to the position of an individual lemma in its environment in such a chapter. Because this organization is the same, or similar, in the great majority of *Placita* chapters it also has general significance, hence belongs with the macrostructure of the treatise as well.

Notifications concerning macrostructure, microcontext, methodology, and technique provided by A will of course be acknowledged, and this information will whenever possible be supplemented by observing his actual practice.

What follows from these various inquiries is unavoidably to be considered in its relationship to the wider doxographical and dialectical tradition, at least to some limited extent. The dialectical-doxographical parallels, earlier than or more or less contemporaneous with A or to be dated later, which are adduced in each reconstructed chapter of Book II in our *Specimen Reconstructionis* and cited at the end of each chapter in Part II of the present Volume, also serve this purpose. Certain ways of presenting a multiplicity of views are already pre-Aristotelian. The influence of an Aristotelian conceptual apparatus and operational methodology, however, was decisive. First, we may mention the *diaeretic* presentation of a variety of tenets in a chapter dealing with a specific theme. Secondly, we should mention the macrostructure of sequential arrangements of chapters (including successions of chapter headings) in relation to the *categories*, often used in a standard order like Aristotle's own: substance and its attributes, viz. quantity (to be divided into quantity according to number, or arithmetically, and quantity according to size, so geometrically), quality, place, doing, being-affected, etc. In the third place we should point at the four equally important Aristotelian *question-types*, or types of inquiry, concerned with existence, cause, the 'what is it' (a question one may ask not only about substance but also concerning the other categories), and with the 'that', that is to say with the question what properties are to be attributed when wondering about phenomena.<sup>2</sup> This background, we repeat, is essential. Yet

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<sup>2</sup> The word *κατηγορία* does not occur in the *Placita*. For the categories as used see e.g. Mansfeld (1990a) 3201–3202, (1992a) 68–70, 75 n. 50; for lists of *Placita* chapter headings which de facto are according to categories see (1992a) 92–93, cf. Lachenaud

our primary aim is the study of A's text itself, and of A's methodology as a doxographer.

The *microcontext* in which a *placitum* must be studied and appreciated is the chapter with its often-indispensable chapter heading. Such a chapter as a rule is thematically connected with chapters in its vicinity, or farther away. Most of the time a chapter dealing with a specific theme is organized in such a way that not only *similarities*<sup>3</sup> but also, and especially, *smaller and bigger differences* of doctrine relating to specific issues or topics among schools and individuals stand out; 'views shared by the physicists in general' (think of Aristotle's formula κοινὴ δόξα τῶν φυσικῶν)<sup>4</sup> are not quoted. Following ancient example, we have called these forms of organization *diaeresis* (division, sorting) and *diaphonia* (disagreement, conflict).<sup>5</sup> Most of the time the tenets are presented

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(1993) 30 and (1998) 42–44. For the types of question see Mansfeld (1990a) 3193–208, (1992a) 76–93, cf. Lachenaud (1993) 33. See also below, Section 14.

<sup>3</sup> Incidentally emphasized by Diels, see below, nn. 10, 46, 47, and Section 3 *init.*

<sup>4</sup> *Phys.* 1.4.187a28–29. The poly-lemmatic *Placita* chapter is πολύδοξος.

<sup>5</sup> A brief account is found at Runia (1999b) 198–199, 218–219. Chrysippus in a verbatim fragment dealing with a topic paralleled in a *Placita* chapter twice uses the verbal form διαφωνοῦσι, see below, text to n. 225. Galen e.g. *PHP* 9.6.20–21, listing the topics (familiar from A 1.5, 1.18, and the beginning of Book II) whether or not the cosmos had a beginning, whether or not there is something outside it, and if so, whether this is a void or there are innumerable other kosmoi, says 'it is not surprising that in philosophy most disagreements have not come to an end' (ἐν μὲν γὰρ φιλοσοφία μὴ πεπαῦσθαι τὰς πλείστας τῶν διαφωνῶν οὐδὲν θαυμαστόν). Cf. Mansfeld (1992a) 89–91 and below, n. 391 and text thereto; other Galenic instances in Nutton (1999) 131–134. The two main uses of *diaeresis* are briefly formulated Alc. *Did.* 5.2, 'one kind of *diaeresis* is the cutting of a genus into species, the other that of a whole into parts' (διαίρεσις μὲν τοίνυν ἐστὶν ἢ μὲν γένους εἰς εἶδη τομὴ, ἢ δὲ ὅλου εἰς μέρη). For Galen *PHP* 4.1.15 on the 'diaeresis of a problem' (τῇ διαίρεσει τοῦ προβλήματος) see Mansfeld (1992a) 88–89. In A the words διαίρεσις and διαίρειν are for the most part used in a physical sense (division of a whole into parts), see e.g. the headings of chs. 2.12\*, περὶ διαίρεσεως οὐρανοῦ (taken up in the first lemma by μεμερίσθαι), and 3.14, περὶ διαίρεσεως γῆς. A logical *diaeresis* of a subdiscipline into seven species is found in A at P 1.6.1 (1.6.10 Diels), διαίρεται δ' ἡ πᾶσα διδασχὴ εἰς εἶδη ἑπτὰ (next, a second, third and sixth τόπος are listed explicitly; for this Stoic terminology cf. below, n. 202 and text thereto). For Aristotelian divisions into several kinds, among which the tripartitions of *Tóp.* 1.10 and 1.14, see below, nn. 293, 329, 330, 330a, 340, and text thereto. The (sub)division of the irrational part of the soul into a courageous and a desiderative part in A at P 4.4.1 is both physical and logical. The word διαφωνία only occurs in the introductory sentence of A at T 4.15 printed for 2.1.2\* in Diels' apparatus, where T on his own steam is explicit about the contrasting views of the pagans, though what he sees is of course there. For the diaeretic microstructure of Aëtian chapters see e.g. Runia (1989) *passim*, on diaphonia 269; for their diaphonic and diaeretic microstructure e.g. Mansfeld (1989b) 319, and *passim*, (1990a) 3060, 3092–3099, and *passim*—further e.g. *ibid.* 3062 n. 12 for the use of both technique and material by grateful Christian authors

not diachronically but synchronically, in a fictitious and timeless setting where dialectic reigns supreme.

The standard chapter is not an aggregate, or a mere sample, of tenets, but a *systematic whole* containing *implicit strategies of argument*. Implicit, because most of the time these practices are neither announced nor in some way or other explained, or suggested, in the text. The differences have to be deduced by the reader from the contents of the various tenets themselves, though sometimes he is helped to some extent by the further contrasting of tenets by means of the particles μέν and δέ (as in A at P at 3.13.1–2, and often in Book II), or by an authorial adverb indicating that a tenet is the converse of its predecessor in the chapter, as Parmenides' is of Empedocles', A at P 5.7.2 ἀντιστρόφως 'inversely'. Or by references to a purported historical controversy: in A at S 1.39.9 we hear about 'Seleucus the astronomer, who also moved the earth (and) opposed Crates in writing' (Σέλευκος ὁ μαθηματικὸς ἀντιγεγραφὼς Κράτητι, κινῶν καὶ τὸς τὴν γῆν). The words ἀντιγεγραφὼς Κράτητι have been abridged away at P 3.17.5. Crates' earth, we know from elsewhere (not the *Placita*), is at rest in the centre, while according to the present passage the earth of Seleucus moves about the sun—a doxa which would have been at home in 3.13. In A at P 5.29.3, a version partially preserved in Greek in G but more fully in Arabic in Q, we read 'Herophilus widerlegte das', viz. the view of Diocles cited in the previous lemma.<sup>6</sup>

A diaeresis, i.e. a division or sorting into to some extent similar but still different or even contrasting views (one or more of which, *more aristotelico*, may be more or less correct), turns into a diaphonia as soon as it becomes clear that the opposites exclude each other and it is intimated, *more sceptico*, that the conflict precludes that a solution can be reached. Individual lemmata often report doxai that have been tailored to fit a diaeretic and diaphonic micro-environment. Diaeretic sorting needs a clear succession of differences, and diaphonic opposition an emphasis on incompatibility. Acknowledging these repetitive diaeretic relations of difference and diaphonic relations of contrast is an

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(for which see also examples in Riedweg (1994) 109–111, 237–238). Some remarks in Lachenaud (1993) 31 (with to us unclear reference n. 57), 36 and 46. For diaeresis cf. also below, nn. 9, 46, 111, 201, 336, 340, and text thereto. Distinguishing between diaeresis and diaphonia, for all their formal resemblance and actual dovetailedness, may solve the difficulties of Laks (1997) 260–263 = (2007) 52–55.

<sup>6</sup> For Seleucus cf. below, n. 247 and text thereto, for Herophilus below, text to n. 456.

indispensable requirement for the understanding and reconstruction of an Aëtian chapter from the sources that are available, and for understanding its individual lemmata. These relations are lost when lemmata are taken from this context and brought together in chronologically ordered prosopographic collections such as the *Fragmente der Vorsokratiker*, or in an edition of the fragments of an individual philosopher or doctor. It is therefore by no means always a good idea to use and interpret a lemma without taking this possibility of doctoring, or functional transformation, and this original setting, into account, but this is by the way. Even in those cases where, perhaps, a tenet is reported more or less without being transformed, the microcontext provides it with an extra dimension, a mood or tone appropriate to its function that one ought to take into account. One may perhaps even speak of a dramatization of the various positions in the context of a dialectical-doxographical quasi-debate, with name-labels functioning as *dramatis personae*, even though, admittedly, philosophers and scientists did argue against each other. In one case we meet with a name-label bursting into speech: Diocles, A at P 5.14.3, see below, Section 18.

Most *Placita* chapters seem to be geared towards weak or strong dissensus, that is to say difference and contrast between views stated in the individual lemmata rather than the choice of a solution, or a contribution to it, though the latter is certainly not excluded. Agreement is indicated by the presence of more than one name-label in a lemma, by words such as ‘similarly’ (ὁμοίως), A at P 1.30.2, 2.15.6\* (only S 1.24.1h), 2.28.6\* (text of S 1.26.2), A at P 3.2.5 ~ S 1.28.1a, A at S 1.49.1a, or ‘resembling’ (ἐμφερῶς), A at P 1.27.3, or ‘in agreement’ συμφώνως 2.29.7\* (P 2.29.5 ~ S 1.26.3), and A at P 5.30.4—the latter agreement (according to a brilliant suggestion of Diels) is with a lemma preserved at S 4.50.30 with Stobaeian name-label Παμενίδου (printed in the right column of Diels’ edition of A 5.30, who changes to the nominative), which has been abridged away by P. The epitomator forgot to delete συμφώνως at P 5.30.4, or made it apply to agreement among the Stoics themselves that are the name-label of this lemma. Finally, agreement can be indicated by idiomatic expressions signifying agreement such as those cited below, Section 16 *ad finem*.

As an example of a dissensus we may refer to the differences among experts concerned with the light of the moon according to A 2.28\*.<sup>7</sup>

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<sup>7</sup> The advantage of this chapter is that, like a few others, it was transcribed verbatim

The chapter begins with a (sub)diaeresis of four views according to which the moon has its own light. According to three of these views this light is weaker (sc. than that of the sun), one just stating the fact, the two others providing various explanations. But other authorities say it gets its light from the sun. This diaeresis of contrary views, viz. derived light versus own light, which determines the main structure of the chapter, thus functions as a diaphonia.

As an example of a loud diaphonia we may mention the disagreement on providence between the Atomists (for the most part contra) and the rest according to 2.3.1–2\*. Following upon (or included in) a diaeresis one or more positions may be quoted which cannot be accommodated e.g. because of their terminology, or because they are exceptional, or bizarre, while following upon (or included in) a diaphonia we may find a compromise position. At A 2.3.3\* Ecphantus is the exception among Atomists because he defends providence, while in the same chapter Aristotle at 2.3.4\*, having it both ways, represents a compromise view: providence in one half of the cosmos, no providence in the other.

This very common structure of most *Placita* chapters, viz. a diaeresis or diaphonia followed by a compromise position, or one that fails to fit the original division, is to some degree prefigured in Aristotle. In the second chapter of the *On the Soul* he opposes three views concerned with the principles (or ingredients) that constitute the soul: some hold that these are incorporeal, others that they are corporeal, while a third group posits a blend of corporeal and incorporeal principles. And apart from those who say that the soul is the cause of motion and from those who beg to differ by saying it is cognitive, a third group posits that it is both.<sup>8</sup> Theophrastus, the first part of whose *De Sensibus* is consistently structured according to a technique of patterned division to which a view is appended that does not fit the diaeresis, also used this version of the diaeresis.<sup>9</sup> In Aristotle however we do not find the strings

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from A by S, so there can be no question of circularity because of our rearrangement of a sequence of *placita*. See Part II, Spec.Rec. ch. 28.

<sup>8</sup> See below, text to n. 294. Also cf. 'the mixed' (οἱ μεμιγμένοι 'medii inter poetas et philosophos' Bonitz 467b49), viz. those who, like Pherecydes, combined myth and non-myth, i.e. combined the opposed positions of the *theologoi* and early poets on the one hand, and of experts such as Empedocles and Anaxagoras on the other, *Met.* N 4.1091a29–b15.

<sup>9</sup> In his analysis of Theophrastus' division of views concerned with perception Diels *DG* 105 already points at the attachment at the end of tenets that fail to belong with

of detailed diaeretic sortings of individual tenets followed by a compromise or maverick opinion typical of numerous *Placita* chapters, while Theophrastus' presentation in the *De Sensibus* is in this respect closer to the *Placita* routine. Examples of diaeretic arrangements of tenets in the dialectical overviews of Aristotle's scientific or ethical treatises need not be given, but it is interesting to note that the substantive *enantilogia* (ἐναντιολογία, 'contradiction') is used by him (though one time only) to characterize views that, as formulated by their proponents, are incompatible. In chapter 7 of Book I of the *On Generation and Corruption* he briefly speaks of the view that like is unaffected by like as incompatibly opposed to the view that like is affected by like. As to its meaning the term *enantilogia* is more or less equivalent to diaphonia.<sup>10</sup>

These strategies of argument were applied throughout. In chapters 2.9\* and 2.25\* the tenets of Posidonius, one of the chronologically last name-labels to be inserted, were not tacked on *ad finem*, but included at 2.9.3\* and 2.25.4\* in significant diaereses. In P's epitome the diaeresis is not always very clear or detailed, but the diaphonia is most of the time quite effective. A partial exception must however sometimes be made for Epicurus' views, for he may disagree with (some of) the others not because he holds a particular opinion or has chosen a particular position, but because he believes that (most of) the options that have been suggested are possible.<sup>11</sup>

The use of Aristotelian categories can be illustrated in a preliminary way from the first two chapters of Book II. This begins with a chapter 'On the cosmos', 2.1\*; see the reconstruction of this difficult chapter in the *Specimen Reconstructionis*. This chapter deals with several questions: it first cites the definition of κόσμος attributed to Pythagoras, then deals with the diaphonic issues as to whether there is one cosmos or infinitely many kosmoi and whether it is finite or infinite, then with a diaeresis of different views as to the distances from each other of the kosmoi

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either branch (cf. also Mansfeld (1996) 184, and references to Diels' pioneering analysis at *ibid.* nn. 5, 40, 54, 87, 97, 102). See also below, n. 46. No discussion of the Aristotelian antecedents in Mansfeld (1996).

<sup>10</sup> Arist. *GC* 1.7.323b1–17 with Rashed (2005) *ad loc.*; see already Plato *Sph.* 236e (the verb *ibid.* 268b, and in Aristotle). ἐναντιολογία is a favourite term of Galen e.g. in his polemics against Chrysippus *PHP* 2.7.4 ~ *SVF* 2.887, *PHP* 3.7.48 ~ *SVF* 2.904, *PHP* 4.4.1 ~ *SVF* 3.464. The contrasting opinions concerned with like to like and unlike to unlike are discussed at greater length Plato *Lys.* 214a–b, 215c–216a, Arist. *EE* 7.1.1235a4–31, *EN* 8.1.1155a32–b10.

<sup>11</sup> See Part II, Spec. Rec. Ch. 5 §6.



according to those who maintain that there are infinitely many of them, and finally with what differences and connections are assumed between the terms ‘all’, ‘cosmos’, and ‘whole’.

As to the sequence according to the categories internal to A 2.1\* it is anyway clear that the first lemma, containing the definition of ‘cosmos’ ascribed to Pythagoras, represents the category of substance, and that the second and third lemmata, about the numerical issue single cosmos versus infinitely many kosmoi, represent the category of quantity. The fourth and fifth lemmata, on the—either equal or unequal—distances between the infinitely many kosmoi, seem to be about a quantitative question pertaining to size that is parallel to that of the numerical opposition between single and infinitely many. The heading in some mss. of P of a thematically related chapter, 2.31\*, with the heading ‘On distances of the moon, how much (πόσον) it is distant from the sun’, shows that the concept of distance may involve the category of quantity. One may however also think of the category of the relative, *pros ti*, because these lemmata are about the distances of these kosmoi with regard to each other. The sixth and seventh lemmata, on the size of the cosmos, viz. the issue whether it is finite or infinite, represent a further quantitative aspect. The eighth lemma, on the distinction between an infinite ‘all’ and a finite cosmos, and the ninth lemma, on the distinction between ‘all’ and ‘whole’, may seem to function as a variety of the opposition between finite and infinite. For the antecedents of the issues represented by 2.1.1–8\* in Aristotle’s *On the Heavens* see below, Section 11. We note in passing that the categories of substance and quantity (both as to number and as to size) have been combined in this chapter. This is not unusual. A at P 3.9 (S is lacking) in the very brief chapter on the earth is about its substance, number, infinity, and even on its origin.<sup>12</sup> As a further example we may mention ch. 2.20\*, where the categories of substance and quantity according to number have been combined. Quantity according to size, however, has been given a chapter of its own in this context, viz. 2.21\*.

The final points, concerned with ‘all’ and ‘whole’, seem to be ultimately inspired by Aristotle’s discussion of the three senses of οὐρανός at *Cael.* 1.9.278b10–21, viz. (1) outer heaven, (2) heavens, and (3) the whole and the all, ‘for we habitually call the whole and the all “heaven”’ (τὸ γὰρ ὅλον καὶ τὸ πᾶν εἰώθαμεν λέγειν οὐρανόν),<sup>13</sup> and they

<sup>12</sup> See below, text to n. 238.

<sup>13</sup> Cf. Simp. in *Cael.* 1.2–12, citing Alexander for περὶ κόσμου as the *skopos* of the

bring this discussion up to date by citing the Stoic distinction between ‘all’ and ‘whole’, and by projecting a distinction between ‘all’ and ‘cosmos’ upon Diogenes and Melissus. These semantic issues are quite properly placed at the end of the chapter because they do not fit in with the main diaereses between (arithmetically) single versus infinitely many, and (geometrically) finite versus infinite. They also link up with its first lemma with Pythagoras’ definition of the term *cosmos*, of which the definitions of Diogenes plus Melissus on the one hand and the Stoics on the other are further refinements.

If this analysis is correct, the main part of this chapter is structured according to the categories of substance and quantity and, perhaps, relation. The category of quality is at issue in the next chapter, A 2.2\*, ‘On the shape of the cosmos’ (four different views, sorted).

A late Platonist also argues that issues in physics may be linked with the Aristotelian categories, as we noticed independently in the late ’80s and early ’90s while studying the *Placita* and its purpose against its background in Aristotelian dialectic. Philoponus, speaking about issues in science in a most interesting passage in his *Commentary on the Analytica Posteriora*, gives examples of such issues (most of which we shall meet in the pages that follow) by relating them to the categories:<sup>14</sup>

When demonstrations prove the attributes of things, i.e. either the ‘what is it’ of things, I mean the definitions, or the quality of substances or the quantity or one of the other categories—(for instance, when we happen

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*On the Heavens*, since Aristotle said the word has three meanings (Alexander cites Plato *Ti.* 28b), also referring to Theophrastus ἐν τῷ Περὶ Οὐρανοῦ ~ fr. 169 FHS&G, and who *ibid.* 281.10–18 explains that ‘the whole cosmos is called οὐρανός’, referring to the precedent at Plato *Plt.* 269d, and (again) *Ti.* 28b, which is literally echoed Plin. *Nat.* 2.1, the first sentence of the work, see Beaujeu (1950) 116. Cf. Cic. *Ti.* 2.4–5. See also LSJ *v.* οὐρανός I.4, and below, text to n. 274. The various Stoic definitions of cosmos at D.L. 7.137–138 (~ *SVF* 2.526, cf. Posidonius fr. 14 E.-K.) and AD fr. 31 Diels (~ *SVF* 2.527) are different, but inspired by the same need for distinction and precision. For a reference to and discussion of various senses of cosmos cf. also Philo, *Aet.* 3.

<sup>14</sup> Philp. in *APo.* 238.21–239.6 (commenting on *APo.* 1.22.83a21–23), distributed over the dialectical-doxographical parallels for A 2.1\*, 2.2\*, 2.4\*, 2.11\*, εἰ γὰρ αἱ ἀποδείξεις τὰ ὑπάρχοντα τοῖς πράγμασιν ἀποδεικνύουσι, τοῦτο δ’ ἐστὶν ἢ τὸ τί ἐστι τῶν πραγμάτων, λέγω δὴ τοὺς ὁρισμούς, ἢ τὸ ποιὸν τῶν οὐσιῶν ἢ τὸ ποσὸν ἢ τινα τῶν ἄλλων κατηγοριῶν (οἷον ὅταν μὲν ζητῶμεν, εἰ τύοι, περὶ οὐρανοῦ, πότερον ἐκ τῶν τεσσάρων στοιχείων συνέστηκεν ἢ ἑτέρας τινός ἐστιν οὐσίας, τὸ τί ἐστὶν αὐτοῦ ζητοῦμεν ὅταν δὲ πότερον σφαιροειδὴς ἐστὶν ἢ ποῖον ἕτερον ἔχει σχῆμα, τὸ ποιόν ὅταν δὲ (πότερον) ἄπειρος ἢ πεπερασμένος, τὸ ποσόν ὅταν δὲ πότερον πάντα τὰ ὄντα ἐντὸς αὐτοῦ περιέχει ἢ οὐ, τὸ πρὸς τι ὅταν δὲ πότερον δρᾷ εἰς τὰ τῆδε ἢ οὐ, καὶ δρῶν ἄρα καὶ ἀντιπάσχει ἢ οὐ, τὸ ποιεῖν καὶ τὸ πάσχειν ὅταν δὲ πότερον αἰδῖος ἢ οὐ, τὸ ποτέ: καὶ ἐπὶ τῶν λοιπῶν ὡσαύτως)—εἰ τοίνυν περὶ ταῦτα μὲν πᾶσα ἀπόδειξις κτλ.

to inquire about the heaven whether it is composed of the four elements or consists of some other substance;<sup>15</sup> we inquire about the ‘what is it’; when we inquire whether it is spherical or what other shape it has [cf. A 2.2\*, on the shape of the cosmos], we inquire about the quality; when about whether it is infinite or finite [cf. A 2.1.7–8\*, on the cosmos], about the quantity; when about whether or not it comprehends inside itself all the things that are [cf. on the cosmos A at P 1.5.3 (name-label Plato); A at S 1.1.29b ~ DG 305b9 (name-label Plato); A 2.*Praef.*\*, ‘starting with the most comprehensive of all things’] about the relative; when about whether it does something to what is in this or that direction, and when doing whether it is also affected in its turn, about doing and being-affected; when about whether it is eternal or not [cf. A 2.4\*, on the cosmos], about time; and concerning the other sorts of attributes in the same way)—well, if every demonstration deals with these issues in this way, etc.<sup>16</sup>

An even earlier parallel is found in the so-called Ethical Doxography A in Stobaeus:<sup>17</sup>

I believe that it is my job to investigate first of all the substance of the subject one is studying, and next the quality and quantity of this substance, and following upon these the relation. I think one should also pay attention to the views of others—not of all, but of those who have differed from each other regarding these matters.

We note the emphasis on the overviews of the warring opinions (*diaphonia*).

<sup>15</sup> A 2.11\*, the chapter dealing with the ‘what is it’, i.e. substance, of the heavens, not only lists Aristotle’s ‘fifth body’, but also mentions, as alternatives, frozen air, a fiery substance, and a blend of hot and cold.

<sup>16</sup> Cf. above, n. 2. For an explicit example in Aristotle concerned with the soul see below, n. 289 and text thereto; for Philoponus on this other issue in terms parallel to those here cited from *in APb.* see *in An.* 32.31–33.14, on which cf. Mansfeld (1990a) 3079 n. 81, 3208–3209. For parallel divisions in Galen see below, n. 340. See already Quintilian *Inst.* 3.6.23, ‘Aristotle drew up a list of ten elements on which every issue seems to turn: *ousia*, ...; the question asks whether something exists; quality; quantity (which was later divided into two, viz. size and number); relative...; place; time; to act, to be affected; to have ...; and as last *keisthai*, which means to be in a certain position, e.g. to lie down or to stand’. The division of quantity according to size and number has been mentioned above, text to n. 2.

<sup>17</sup> Stob. II (*Ecl. eth.*) 42.1–6 W: ἡγούμενος δ’ ἐμαυτῷ πρόειπεν πρὸ παντὸς τὴν οὐσίαν δεῖν ἐπισκοπεῖν οὐ τις πραγματεύεται, κἄπειτα ποιότητα τὴν περὶ αὐτὴν καὶ ποσότητα, καὶ τούτοις ἐφεξῆς τὸ πρὸς τι, νομίζω προσεπινοητέον εἶναι καὶ τὰ τῶν ἄλλων ἐπισκοπεῖν, καθάπερ οὐ πάντων, οὕτως τῶν περὶ ταῦτα διανεγκάντων. For the Ethical Doxography A see Hahm (1990) 2945, 2979–2980, 2982–2985; note that *ibid.* 2982 he translates as ‘who are outstanding’.

But we should return to the *Placita*, where Aristotle's shadow is also present in another way. The exposition of problems and topics may differ from one of his treatises to another one, or be insufficiently clear and consistent in a single treatise. Such incongruities, or imperfections, occur also in A. As a first example, we can point to the main diaeresis in the *Meteorology* between those phenomena that have real existence and those that are merely apparent. This only becomes conspicuous in the third book of Aristotle's treatise, and then in A only as late as the fifth chapter of the part of Book III dealing with meteorology (viz. chs. 3.1–8 + 18). Secondly, it is only in a psychological context, viz. in the second chapter of the first book of the *On the Soul*, that Aristotle uses the diaeresis of incorporeal versus corporeal as a division of foundational importance. In the *Placita* this diaeresis is formulated *disertis verbis* as late as Book IV, in the first lemma of the second of the two chapters on the *soul* (4.2 'On the soul', 4.3 'On the soul, and what is its substance').<sup>18</sup> It only has an implicit and occasional presence in A 1.3, the difficult chapter 'On principles' ultimately depending *inter alia* on Aristotle's *Metaphysics* A 3–6, *Physics* 1.2, and the introduction of Theophrastus' *Physics*, that is to say that you only notice it there when, prompted by information from elsewhere, you begin looking for it. In A 1.3.19 Diels at S 1.10.16a we are told that Ecphantus was the first Pythagorean to make the monads corporeal. This implies that earlier Pythagoreans are assumed to have regarded them as incorporeal. The opposition between the terms corporeal and incorporeal is indeed there, but one has to tease it out and it is in no way emphasized, let alone vital to the chapter as a whole. The term incorporeal, too, occurs here only once, viz. in the Socrates-and-Plato lemma P 1.3.11 ~ S 1.10.16a, where the 'idea' is defined as 'incorporeal substance', exactly as in the first clause of the anonymous definition at the beginning of A at P 1.10.1 ~ S 1.12.1.

The priorities of the Hellenistic *philosophical* agenda, in particular as we shall see the systematics of Stoic physics, psychology, and epistemology, were likewise influential in relation to the macrostructure. Sequences and interrelations of major questions as treated in some of Aristotle's treatises dealing with physics in the large sense of the word

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<sup>18</sup> Diels *DG* 184 noticed the contrast ('quibus [the corporealists of 4.3] priores [the incorporealists of 4.2] dilucide scriptor opposuit'), but failed to point out the precedent in the *On the Soul*. See further below, text to n. 110.

(i.e. theoretical physics as well as cosmology, psychology, and biology) are also to a certain degree accounted for in this context. Though regularities such as these can also, and will, be traced and discerned by a phenomenological approach which notches up what appears to be going on in the *Placita*, this approach only delivers a ‘that’, while appealing to a tradition we cannot afford to ignore may give us something resembling a ‘why’, to use the terms with which Aristotle indicates two of his four main types of inquiry.

Though the roots of Aëtian doxography are for the main part in Peripatetic scientific inquiry and dialectic, the macrotextual structure of the compendium is also securely anchored in what we may call the Hellenistic *historiography* of philosophy. This is not only clear from the progressive absorption and accretion of lemmata concerning Hellenistic philosophy and science which have been added to those concerned with an earlier past, but also from the unobtrusive but matter-of-course way in which—*pace* Diels—historiographical concepts such as Sect (*hairesis*, i.e. philosophical school, or school of thought) and Succession (*diadoché*) make their appearance.

Another important and traditional component of the macrostructure is the arrangement of the account of physics by starting with the principles, and then descending from the heavens to humans, animals, and plants. This will be discussed below in Section 3 *ad finem*,

Accordingly, in our investigations priority will be given to the study of form and background rather than matter. The inquiry into the organization of greater and lesser wholes takes precedence over that of ingredients, such as individual names or contents, e.g. Anaximander, or the nozzle of a bellows. Though far from irrelevant, these in principle come in only insofar as they contribute to the understanding of an immediate context, or a larger structure. Background is important also for a better understanding of the themes formulated in the chapter headings, both in sequential arrangement and with regard to a specific issue in physics.

From an ideal or scholastic point of view one should proceed either from the more general to the more particular methodological issues, or from the more particular to the more general, but this has not proven entirely practicable. Particular points turn up in the course of the study of general issues, and conversely. A special case is that of the alternative readings of a specific doctrine sometimes presented together in a single lemma, which may or may not be documented by a reference to, or quotation of, a source for an alternative (see below, Sections 16 and

**18).** Each time this is a question relevant to a particular microcontext, but as this approach is found in a number of places in the treatise, it also has general significance.

## 2. *Physical Tenets*, *Physikos Logos*

*Summary.* In this section we first concentrate on the tenets (*doxai*, or *dogmata*). Aëtius presents a wide spectrum of these as they pertain to the physical part of philosophy, and does so in a compressed format. Tenets are formulated briefly to extremely briefly, and are best understood in the context of the information provided by the chapter where they are located. Examples are given. Next we turn to the account of physics as a whole, arguing that the treatise possesses a certain amount of cohesion. We comment on Diels' useful source-critical analysis. Its condemnation, however, of certain chapters or parts of chapters as foreign to the true *Placita* tradition is biased and fails to recognize the need for providing up-to-date and useful information. For instance Diels failed to see that the cosmological chapters 1.4–5 are not separated from the cosmological Book II because of the compiler's incompetence, but because he wishes to improve the account of physics by following the model of the Stoic *physikos logos*.

An Aëtian chapter may comprise from two to about thirty subsections, or lemmata, i.e. be poly-lemmatic, and while these lemmata are usually very brief, they are often enough a bit longer, and not infrequently quite a bit longer. A few chapters are mono-lemmatic, i.e. contain only a single lemma, sometimes long. The full version of the author name and title of the work of ps.Plutarch, the first of our three main sources<sup>19</sup> for the reconstructed *Placita*, as quoted in the *Mosquensis* and as confirmed by the Arabic translation of Qusta ibn Luqa, runs: *Of the Philosopher Plutarch, On the Physical Doctrines Held by the Philosophers, Five Books of Epitomê* (Πλουτάρχου φιλοσόφου Περί τῶν ἀρεσκόντων τοῖς φιλοσόφοις φυσικῶν δογμάτων ἐπιτομῆς βιβλία εἰς). Eusebius *PE* 14.13.9 refers to the work as Plutarch's *On the Physical Doctrines Held by the Philosophers* (Περὶ τῶν ἀρεσκόντων τοῖς φιλοσόφοις φυσικῶν δογμάτων). Theodoret *CAG* 4.31 refers to Aëtius' work as *Aëtius' Collection of (Views) Held* (Ἀετίου τὴν Περί ἀρεσκόντων ξυναγωγήν), and to ps.Plutarch's as *Epitome of the Physical Doctrines which have been Held by the Philosophers* (Περὶ τῶν τοῖς φιλοσόφοις δοξάντων ἐπιτομήν). At *CAG* 2.95 he characterizes Aëtius and

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<sup>19</sup> On the epitomizing method of P see Vol. 1:182–195; on the coalescing method of S *ibid.*, 213–237, on the more free approach of T *ibid.*, 276–290.

ps.Plutarch by telling us that they ‘teach the doctrines of the philosophers’ (τὰς τῶν φιλοσόφων ἐκπαιδεύουσι δόξας). We have italicized the words that are the same. Though in Volume I of the present work we have argued in favour of Theodoret’s version of the title for Aëtius at CAG 4.31, we now believe that his reference (presumably abridged to avoid repetition) only gives us part of the title. The main argument for attributing the full title to Aëtius is that the words ‘physical doctrines held’ are indispensable, for the mere ‘(views) held’ could include tenets in the field of ethics. In the proem of the treatise Aëtius insists on the distinction between *theoretical* issues such as those of a physical nature, and *practical* issues concerned with human conduct. We may moreover safely assume that the formula *physika dogmata* in this title is the descendant of the formula *physikai doxai* in the title of Theophrastus’ lost treatise.<sup>20</sup>

In the proem the author states *disertis verbis* that he will ‘hand down the argument [or: doctrine, account, theory etc.] of physics’, or rather ‘the physical part of philosophy’ (A at P 1.*Praef.*1, τὸν φυσικὸν παραδῶσιν λόγον).<sup>21</sup> We note, of course, that we do not get a systematic account of natural philosophy in the way of the *Timaeus*, or Aristotle, or Epicurus, but an undogmatic collection of variously divergent views concerning the topics of natural philosophy; topics which, as we shall see, are presented in a sequential arrangement that invites and bears comparison with the order in which the main representatives of the various schools present the doctrines of their physics.

In the manuscripts of P the word ‘epitome’ is lacking in the title of the treatise, but it does occur in its repetitions at Books II, III, and V.<sup>22</sup> In the proem to Book III (more on which below), the author tells

<sup>20</sup> For our earlier view, now retracted, see Vol. I:323–327. φυσικῶν δογμάτων is equivalent to φυσικῶν δόξων. For Seneca *Ep.* 95.10 on Latin *placita* or *decreta* for Greek *dogmata* see below, n. 334, and note that in the previous paragraph of this letter he says that the more liberal arts have their own particular *decreta*, e.g., medicine: ‘accordingly the school of Hippocrates is different, different that of Asclepiades, different that of Themison’: diaphonia. For the title of Theophrastus’ great treatise see below, n. 334, and for the concept of a *physikê doxa* in Arist. *Tōp.* 1.14 below, Section 14. For the explicit exclusion of ethical themes from physics in the proem of the work see below, Section 6.

<sup>21</sup> This formula also D.L. 7.132 (see below, Section 8 *init.*), variously translated in the literature as ‘physical doctrine’, ‘fisica’, ‘Naturphilosophie’, or ‘traité physique’. Clem.Al. *Strom.* 1.78 says Alcmeon was the first to write a ‘physical treatise’ (φυσικὸς λόγος). For further examples of the formula cf. below, n. 334. For παραδῶσιν see below, n. 120.

<sup>22</sup> *Ad finem* of the title Book II has ἐπιτομῆς τὸ β’, Book III ἐν ἐπιτομῇ, τὸ γ’, Book V ἐν ἐπιτομῇ, τὸ ε’.



us that ἐν τοῖς προτέροις, ‘in the previous book(s)’ (or chapters), he has treated the theory concerned with celestial phenomena ‘in the form of an epitome’, ἐν ἐπιτομῇ. The Lamprias catalogue of Plutarch’s works cites the title with the word ‘epitome’ at no. 61, and so does T 4.31, Περί τῶν τοῖς φιλοσόφοις δοξάντων ἐπιτομήν.

The designation ‘epitome’ does not necessarily mean that P’s work advertises itself as an epitome (of A), or was considered to be such an abridgment by others. What is meant is that it is a ‘digest’, or compendium, ‘of physical theories’, ἐπιτομή φυσικῶν δογμάτων, rather than an epitome of another treatise. The word ἐπιτομῆς in the Mosquensis and Qusta ibn Luga is short for ἐν ἐπιτομῇ.<sup>23</sup>

The doctrines of the philosophers of nature and the scientists and others covering the whole of physics are presented in a compressed format (ἐν ἐπιτομῇ)—a characteristic of which we become aware soon enough as we look at a few chapters, or even at a single lemma: after the no less than fifty-three words devoted to Empedocles’ two suns in the difficult and complicated lemma A 2.20.13\* in both P and S, the purported gist of this description is stated in only nine words at its end. This terse final formula, ‘the sun [one only!] is a reflection of the fire round the earth’ (ἀνταύγειαν εἶναι τοῦ περὶ τὴν γῆν πυρὸς τὸν ἥλιον), closely resembles the shortest type of *placitum* to be found in A. It is preceded by the formula ‘to express (this) briefly by cutting the matter short’ (ὥς δὲ βραχέως εἰρησθαι συντεμνόντα, five words).<sup>24</sup> What we have here as a coda looks like a further epitomization and simplification of

<sup>23</sup> On the title, and the meaning of ἐπιτομή, see Vol. 1:120–124, 182–184, 319–327. For the formula ἐν ἐπιτομῇ cf. e.g. [Plu.] *Fat.* 568F, Gal. in *Aph.* 17B.399.6 K., and Wölfflin (1902) 334 on the proem of A Book III, ‘damit ist doch nur gesagt, dass der Verf. [P according to Wölfflin] die Astronomie in einer gedrängten Darstellung gegeben habe’. On brevity as a characteristic of introductory technical writings (or passages) see Diels *DG* 242 n. 1, Whittaker (1990) xvi n. 10 with reference to the formula ‘clearly and concisely’ (σαφῶς τε καὶ συντόμως) already found Anaxim. *Rh.Al.* 30.5, Asper (1998) 311–313, and below, Section 15. In an earlier publication, Mansfeld (1993b) 360–361 n. 8 rejects the *opinio communis* that Theophrastus’ *Epitomai of the Physikai Doxai* (Θεόφραστος ... ἐν ταῖς τῶν φυσικῶν δοξῶν ἐπιτομαῖς) is an epitome of the great treatise in eighteen books, since Galen in the famous passage in *Nat.Hom.* 15.25.10–26.6 K. (Thphr. fr. 231 FHS&G ~ *Phys.Op.* fr. 5a Diels), where he mentions this work, explains ταῖς τῶν φυσικῶν δοξῶν ἐπιτομαῖς as τὴν ἐπιτομήν ... τῶν φυσικῶν δοξῶν, i.e. as a compendium of opinions, not of *Opinions*, and compares the *Menoneia*, the author of which according to Galen excerpted the doxai of the doctors from the medical treatises that were still accessible to him. Cf. also below, n. 334.

<sup>24</sup> Diels *DG* 53 condemns the accusative συντεμνόντα as a solecism (preferring the dative) and in his text put asterisks on either side. This final phrase is lacking in Q, who also in other respects has a different text, see Daiber (1980) 401–402, and Part II,

a passage that in spite of its relative length is already very compressed. Perhaps A copied out the long lemma he found in his source, then realized he could have expressed this much more briefly. But a better suggestion is that two different lemmata found in different sources, one speaking of two suns and the other abridging to just ‘the’ sun, have been combined here by A. This is consistent with evidence elsewhere in A pointing at pre-Aëtian *Placita* sources, some of which gave rather more details than others.<sup>25</sup> Such sources seem to be vying as to which can provide the shortest account. In the present case the shorter version can hardly be considered a faithful abridgement of the longer, since a vital element, viz. that there are *two* suns, has been eliminated, and only the point that ‘the’ sun is produced by the reflection of a fire has been preserved. Even so, the first fifty-three words of 2.20.13\* relate to the final nine in a way comparable to the relation between S (often) and P. And in the context of its chapter even the short version of the Empedoclean tenet concerning the sun plays its part in one of the diaereses, viz. that opposing the sun as reflection (i.e. an optical phenomenon more properly at home in a meteorological context) to the sun as fire, or fiery (i.e. substantial). This particular contrast is important in Book III (and in Aristotle’s *Meteorology* and related literature), where it serves to distinguish really existing meteorological phenomena from those which subsist as forms of reflection.

Whatever one thinks of our suggestion concerning A’s sources here, what in fact we see is how a relatively long lemma may be abridged much further as long as it continues to be significant in the context of a strong diaeresis. A or P could have omitted the fifty-three words as well as the formula introducing the coda.

Interest in A’s difficult and complicated treatise has in the main been focused on the information it provides about tenets in the fields of natural philosophy and cognition (understood as belonging with natural philosophy), in the first place those ascribed to Presocratic and to a lesser degree those attributed to Hellenistic authorities, tenets that part of the time are difficult or even impossible to obtain elsewhere. The treatise has been reconstructed from a plurality of sources only to be dismembered again, or so it seems. Since the publication of Diels’ *Doxographi Graeci*, and following his example in the *Fragmente der*

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Spec. Rec. ch. 20, sect. 3. An attempt to correct the Greek text in Mansfeld (1986c) Empedocles no. 58, reading ὄλυμπον [cf. Q] τὸν κρυσταλλοειδῆ for ἥλιον τ. κ.

<sup>25</sup> See below, text to nn. 398, 403. For alternatives see also below, Section 18.

*Vorsokratiker* twenty-two years later, the reconstructed A (just like some of his cousin writings) has become a *Fundgrube*,<sup>26</sup> and in fact virtually all the bits and pieces believed to be worthwhile have been dug up and relocated to collections of fragments, thus acquiring a new and different context. But the brief remarks on the lemma about Empedocles' sun(s) as part of a diaeresis made above already suggest that when interpreting such a text it is crucial to keep its *Placita* origin and context in mind.

As we have seen in Volume I of the present study, Diels' approach was primarily source-critical. He concentrated on content and style. By removing what he believed to be impure later accretions he endeavoured to uncover the remains of an older work in six books called by him *Vetusta Placita*, which, in their turn, were in part and ultimately derived from a treatise by Theophrastus dealing with the doctrines of the physicists in sixteen books. According to Diels, the later additions, as we shall also see below, were either the work of A himself or derived by A from various sources outside the *Placita* tradition, and so are to be rejected for the tradition which he insisted ultimately went back to Theophrastus. The content of the treatise was thus explained by means of a reduction to its purported source-components, and the treatise itself reduced to a compilation, a macédoine of pieces of various provenance and date.<sup>27</sup> Diels regarded the development leading to this final Aëtian result and (worse) to P's epitome as a process of progressive decline, which of course further legitimated his search for authentic treasures hidden in these later writers.<sup>28</sup>

<sup>26</sup> The first to avail himself of the material in the *DG* in this way seems to have been Tannery (1887), who adds a 'Doxographie de ...' at the end of each chapter concerned with an individual Presocratic; for the 'Fragments' he still had to use Ritter & Preller (1886) or (1875). Tannery's account of the Prolegomena of the *DG* (*ibid.*, 19–29) is excellent. We may note in passing that the *Fundgrube* as a whole is far from exhausted; Ax's characterization (1986) 77 of A as this 'als philosophiegeschichtliche Quelle ebenso bedeutsame wie *unerschlossene* Werk' (our emphasis) is very much to the point.

<sup>27</sup> *DG* 56, 'the contents of the *Placita*, collected from everywhere', 'materiam Placitorum undique collectam'. Parallels: Valerius Maximus in his dedication to the emperor Tiberius writes he has decided 'to select from famous authors and arrange the deeds and sayings worthy of memorial', *ab illustribus electa auctoribus digerere constitui* (tr. Shackleton Bailey). Hieronymus in the dedicatory epistle of his revised Eusebian *Chronika* in Latin writes that he has 'inserted or added a number of excerpts from Suetonius and other famous historians' for the period from the epoch of Troy to the twentieth year of Constantine, *nunc admixta sunt plurima, quae de Tranquillo et ceteris illustribus historicis curiosissime excerpti*, p. 6.17–20 Helm & Treu. For G's statement see below, text to n. 46.

<sup>28</sup> For Diels' negative attitude towards the later sources cf. Vol. 1:99–100, and below, n. 136; for Diels abusing even Cicero see below, n. 187.

An unfortunate consequence of this approach is that little or no attention has been given to the method and purpose of the *Placita*, that is to say to the various ways tenets are presented and to the uses they were intended for, or were capable of serving, as has already been intimated in Section 1 above. Attempts to make up for this deficiency have been made by Christoph Riedweg, André Laks, and the present authors in various studies.<sup>29</sup> We shall return to this aspect of the matter. We note already, however, that Diels' strong focus on Theophrastus as ultimate source did not allow him to see the crucial influence exercised by Aristotle, also briefly described in Section 1 above.

Another deplorable consequence is that so far no attempt has been made to regard the Aëtian *Placita* as a purposely composed *book* which aims at a certain amount of cohesion, for all the author's interest in contrasting views, or his occasional sloppiness. This neglect is for instance quite conspicuous in relation to the first section of Book I, from the proem up to and including ch. 1.5, then moving on to ch. 1.10. Diels believed that chs. 1.4–5 are out of place at the beginning of Book I, because they belong with the exposition of the cosmology in Book II. He attributed this purported anomaly to A's premature and willful desire to explain in what way the elements combine to form a cosmos, the theme of 1.4, 'How the cosmos came to be composed', though he also correctly pointed out that the chapter links up with the next, 1.5, 'Whether the All is one'.<sup>30</sup> It has to be admitted that the position of these two chapters at such a noteworthy distance from the cosmological book needs to be explained, but Diels' reference to the author's lack of competence is insufficient as explanation.<sup>31</sup> Another problem is caused by the fact that the detailed cosmogony of 1.4 is not only a relatively

<sup>29</sup> Runia (1989), Mansfeld (1989a), Mansfeld (1989b), Mansfeld (1990a), Runia (1992), Mansfeld (1992a), Riedweg (1994), Runia (1996a), Mansfeld (1996), Laks (1997), Mansfeld (1999a), Mansfeld (1999b), Runia (1999a), Runia (1999b), Mansfeld (2002a), Mansfeld (2004), Runia (2005), Mansfeld (2005a).

<sup>30</sup> *DG* 58, 'quis vero credat post principia [i.e. 1.3] mundi fabricam [i.e. 1.4] expositum iri, cum cosmologiae alter liber [i.e. II] destinatus sit? At libuit Aëtio c. 4, ut elementa quomodo coeherent in mundum doceret. [...] pergit scriptor unusne an plures mundi sint disceptare I 5 εἰ ἐν τὸ πᾶν.' He adds that A himself is also responsible for excerpting A at P 1.6 from a Stoic, and at P 1.7.1 from an anthology using an Epicurean source. This interpretation of 1.7.1 (1.7.1–10 according to Diels' numbering in the *DG*) has been refuted by Runia (1996a).

<sup>31</sup> Cf. above, n. 28. Lachenaud (1993) 215 n. 1 argues that 1.4 is not as badly placed as Diels believed, because there are cosmogonical elements in other lemmata in Book I. This is correct, but not yet sufficient as an answer.

long mono-lemmatic piece lacking a name-label, but is also easily, and perhaps more importantly, identified as being of Atomist provenance, which at a first glance suggests a peculiar predilection on the part of the doxographer.<sup>32</sup> For source-allergic Diels this meant derivation from an Atomist source outside the genuine *Placita* tradition. But we believe that this suggestion, too, is insufficient as an explanation of the presence of the chapter at precisely this point. What is important in the treatise's macrocontext is not in the first place the particular Atomist content decisive for Diels' evaluation, but the general theme proclaimed in the heading Πῶς συνέστηκεν ὁ κόσμος.

Diels could have added that the next chapter, 1.5, anticipates several issues that later come back on the agenda in the first chapter of the next book, A II, and so are relevant in regard to the macrostructure: its first lemma, A at P 1.5.1 ~ S 1.22.3a, is about the Stoic view that there is a single cosmos, identified by them with the corporeal All, the second, A at P 1.5.2 ~ S 1.22.3a, is a tenet with name-label Empedocles, who likewise held that there is one cosmos (ordered universe), which however is only a small part of the All.<sup>33</sup> Semantic distinctions, comparable to those at ch. 2.1.8–9\* cited above.<sup>34</sup> The third, comparatively extensive lemma in A at P 1.5.3, with name-label Plato, speaks of a single cosmos which is perfect (cf. *Ti.* 32c) and adds that the All, too, is one, with arguments pro and (exceptionally) contra this position. The penultimate of these arguments contra introduces the issue as to whether there is something outside the cosmos (the term 'void' is not used), which Plato is said to deny and in favour of which (and against Plato's position) a standard Epicurean argument is brought forward, viz. that the cosmos needs something to turn around in.<sup>35</sup> This links this lemma with 1.18, 'On void', where in the first lemma<sup>36</sup> Plato is counted among the natural philosophers descending from Thales who denied the existence of the void. It also links it with 2.9\*, 'On what is outside the cosmos, whether it is a void' (P; S slightly different), where

<sup>32</sup> Diels *DG* 58. In *DK* the text is printed as Leucippus fr. A24 DK, and confidently said to be an 'Auszug aus dem Μέγας διάκοσμος'. This is a leap in the dark.

<sup>33</sup> We note that P's (i.e. A's) order Stoics—Empedocles has been changed to Empedocles—Stoics in S (cf. below, nn. 140, 480), perhaps because S wanted to start with the prestigious early name-label.

<sup>34</sup> See text to n. 13.

<sup>35</sup> Since it can have a number of different shapes, cf. 2.2.5\*; not stated in the present lemma.

<sup>36</sup> P only; a Plato lemma for this tenet from A is not extant in S, who at 1.18.4c quotes *Ti.* 32c–33c preceded by part of A 2.9.4\*.

in the fourth lemma P has Plato plus Aristotle deny that there is a void either outside or inside the cosmos;<sup>37</sup> an original Aëtian lemma with name-label Aristotle seems to be lost for 2.9\*, since S clearly found the text 1.18.1c he composed (a short version of the lemma of A more fully transmitted at P 1.18.6 plus an abstract from AD)<sup>38</sup> to be sufficient for his own chapter on void and place, 1.18, and P, as we have just noticed, included this name-label in the Plato lemma at 2.9.4\*.

The fourth lemma, A at P 1.5.4 ~ S.1.22.3a, name-label Metrodorus, contains an argument in favour of the assumption that there are infinitely many kosmoi. So the contrast between A at P 1.5.1–3 and 1.5.4, one versus infinitely many, anticipates that of 2.1.2\* versus 2.1.3\*. The actual contents of these chapters, the material so to speak, is similar, and their form, i.e. the presentation of contrasting or similar positions concerned with plurality and infinity (category of quantity), is virtually the same. Puzzles about the cosmos and the All and the Whole are thus to be found on either side of the divide formed by the theological and theoretical chapters which constitute the major part of Book I, viz. 1.6–29.

What at any rate we assume and shall attempt to make credible is that the sequence elements (1.3), cosmogony (1.4), number of kosmoi plus relation between cosmos and All (1.5 + 2.1\*), and then the rest of the cosmology and treatment of celestial phenomena in Book II, is basic. Chs. 1.1–2 have been installed before ch. 1.3. The theological issues of chs. 1.6 + 1.7 + 1.8 and the chapter series 1.9–29 about concepts (mostly illustrated with examples from physics) such as matter, cause, shape, colour, mixture, void, place, time, motion, necessity, fate, and luck have been combined with an account dealing with cosmogony and cosmology. As a matter of fact, the presence of 1.6–29 creates one of the chief problems to be investigated in relation to the macrostructure of the *Placita*, for the connection between the contents of chs. 1.4–5 and Book II and following with this succession of theological and theoretical chapters is not clear, at least not immediately. Diels saw this differently. For him 1.*Praef.* + 1.1–8 are problematic, while the chapters after 1.8 are all right: ‘from here [1.9] to the end the character of Book I is simple and the same’, ‘simplex igitur et una est hinc usque ad finem primi libri natura’.<sup>39</sup>

<sup>37</sup> For the *constitutio* of the lemma see Part II, Spec. Rec. ch. 9, sect. 2.

<sup>38</sup> See Vol. 1:251–252.

<sup>39</sup> *DG* 60.

A further point. The passages dealing with Successions (and Sects) as found in their present form in ch. 1.3, 'On principles, what they are', largely derive from the literature on philosophical genealogies: the *Diadochai*, or 'Successions' of philosophers. According to Diels this is a suspect biographical genre foreign to the far better doxographical genre to which the *Placita* belong; thus the Successions, too, are plunged into limbo.<sup>40</sup> What should be acknowledged is that in the *Placita* presentations of tenets are far more important than Successions of philosophers, though these, too, play a part. Yet removing the Successions and Sects (and inventions?) from the *Placita* entails placing the work even further beyond the *spatium historicum* than it already is. Aristotle in the first book of the *Metaphysics* (and sometimes elsewhere too) and Theophrastus in the fragments of his *Physics* preserved by Simplicius in some cases are already explicit about relative chronology and master—pupil relationships, see below, Section 7. It is therefore not at all surprising to find something similar in A.

The proem and chapters 1.1–2 are also rejected by Diels, and then of course neglected, once it has been argued that for the most part they have been cobbled together by A from sources one need not take seriously.

Yet the succession of chapters from the proem to ch. 1.8 by no means suffers from defects and inconsistencies to the extent claimed by Diels. On the contrary, one can show that one chapter after the other serves a definite purpose in the context of the series constituting the opening pages of the treatise.<sup>41</sup> This treatise is not a work with literary pretensions. It is more likely to be a manual containing material for training purposes as well as a work of reference, a *liber memorialis* or vademecum. It has the limited charms of a programme guide. It is a very concise but also very detailed account of the whole of physics according to its various practitioners as this discipline was understood in the first to second century CE, and it has been provided with an introduction to its subject which as to its ingredients belongs with the way introductions to *Fachschriften* were set out. That the treatise, as Diels thought, was compiled from a multiplicity of sources need not be denied. More important than

<sup>40</sup> Although *DG* 104 with n. 3 he concedes that Theophrastus 'to some extent took the Successions into consideration', 'successionum aliquam rationem haberet'. See below, n. 174 and text thereto. In its original form ch. 1.3 according to Diels (1881) 348 came 'in der Ursammlung [i.e. the *Vetusta Placita*] an erster Stelle'. Cf. also below, n. 92.

<sup>41</sup> Lachenaud (1993) 22, who calls 1.4–8 'éléments erratiques', follows Diels' source-analysis.

precise, or pseudo-precise, source identification however is the explanation of the motives behind additions, substitutions, and other forms of modification, provided we are able to diagnose that changes of this kind have occurred.

The introduction of the treatise will be analyzed below, in Section 6. First, however, a minor point has to be dealt with, viz. Diels' claim that the immediate predecessor of A was a treatise in six books.



### 3. *Number and Content of Books: Stylistic Cleansing and Purported Vetusta Placita*

*Summary.* Our evaluation of Diels' source-criticism is continued in this section. His interpretative comparison of the *Placita* with Augustine's information on a doxographical work of Celsus in six books is flawed. Similarity is achieved at the cost of removing those parts of the work that fail to fit Augustine's description of Celsus' approach. Diels is also biased in arguing that the presentation of contrasting views does not belong with the genuine *Placita* tradition. The macrostructure of the treatise should not be interpreted with Celsus in mind but rather against the backdrop of the traditions of natural philosophy. The account of the principles is followed by the *descensus* from the periphery of the cosmos to its centre. It proceeds from principles via cosmology to biology, or from macrocosm to microcosm. It corresponds to the order of Presocratic treatises as reported by Aristotle, to the order of the *Timaeus*, to the order of Aristotle's own course of study according to the preface of the *Meteorology*, to the order of Greek natural philosophy according to Megasthenes, and to that of an impressive number of later works.

P's compendium of A, we have seen, has five books. Diels *DG* 182–184 argued that what he believed to be A's predecessor and main source was a richer collection of *placita* he called the *Vetusta Placita*, which had six books.<sup>42</sup> He posited that numerous abstracts from this earlier doxographical work can still be recognized in the remains of the Aëtian work as reconstructed, provided one makes the proper distinctions and in consequence is able to trim away the additions for which the swindler A is responsible.<sup>43</sup>

Compilations from multiple sources of course do exist in ancient literature, see below on G as an example.<sup>44</sup> But the paradigm for Diels' manoeuvre was probably provided by the work of the Analytical scholars of the nineteenth century and earlier on Homer and other authors. These Analysts argued that successive generations of epic poets and

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<sup>42</sup> In Vol. 1:184–187 we briefly argue that P stuck to the number of books in A.

<sup>43</sup> See Vol. 1:99–101.

<sup>44</sup> See also above, n. 27.

rhapsodes are responsible for interpolations in and additions to the original works. Diels' pupil Felix Jacoby, a late Analyst, in his *Hesiodstudien zur Theogonie* of 1926 and his edition of the *Theogony* of 1930 peeled off more than sixty percent of the epic's verses. A difference is that Diels introduces only a single 'rhapsode', viz. A, though multiplicity of interpolation and addition was brought in by the assumption that the culprit had plundered various sources, as we saw and shall see. Diels moreover probably had in mind the words of G (the tract he already wrote his dissertation of 1871 on), ch. 2, *DG* 598.5–7: 'it is our aim to speak about those things [viz. philosophy and its parts] by bringing together what here and there has been said by earlier authors; we have discovered nothing ourselves' (προϋθέμεθα δὲ διαλεχθῆναι περὶ τούτων οὐδὲν μὲν ἴδιον εὗρηκότες, τὰ δὲ παρὰ τοῖς προτέροις στοράδην εἰρημένα συναγαγόντες). But G's statement is a *topos*, found in one form or other in numerous authors and not only among the Latin breviarist historians of Late Antiquity. It is meant to warrant the compiler's reliability: no innovation—though of course no such work is modification-or addition-proof.<sup>45</sup>

<sup>45</sup> For varieties of the *topos* cf. e.g. Philo, *Vit. Cont.* 1 'I will not add anything of my own', *Op. Mund.* 4, 'nothing from our own supply'. For examples of compilations like G see above, n. 27 and the present note, *ad fin.* In a paper published twelve years later Diels (1889) 304 praised Reiske, the first scholar to see that Diogenes Laërtius is a compilation, 'centonem ... variae et compositae excerptiois'. On Jacoby's Hesiod see the captivating paper of Most (2006). Other examples: that not only words and phrases but also whole sections had been interpolated or added from elsewhere in Xenophon's *Memorabilia* was a common opinion esp. in the later nineteenth century. In the 'praefatio critica' of the ed. maior of the Teubner edition of this work (1889) W. Gilbert writes (p. iii): 'Inprimis id dubitari non potest, quin multae non modo voces, sed etiam tota capita commentariorum non ab ipso Xenophonte sint scripta. Ac plura etiam, quam putaverunt [L.] Dindorf et Schenkl, aut interpolatori deberi aut aliunde in commentarios inserta esse, demonstratum est ab A. Krohn, Sokrates und Xenophon, Hal. 1875, [...] et ab J.J. Hartmann in *Analectis Xenophonteis* (Lugd. Batav. 1887)', etc. Hermann Usener was one of the two dedicatees of Krohn's book, the first chapter of which deals with 'Die Stoa in den Memorabilien'. Characterizing purported interpolations P. Hofman Peerlkamp in his edition of the *Satirae* (1863) writes, p. 11: 'Horatius obscura ista, inepta, ridicula, absurda, quibus falsae manus vera poemata corrupuerunt, scribere non potuit.' For Diels on G's ostensible modesty see his paraphrase of the words translated in the text (1870) 9, 'modestissimum se gerit scriptor, qui cum nihil ipse invenerit, breviter atque enucleate alii quae senserint se prolaturum esses confitetur', and *DG* 242–243. G's self-definition amounts to a characterization of his work as a compilation (treatment of a subject by combining and condensating multiple sources), see Eadie (1967) 10–20 'The *breviarium* as an historical genre', Kaster (1995) 147 on Suetonius *Gram.* 10.6.

The issue of the number of books of the earlier work is less important than that of the purported editorial modifications carried out by A. We should look a bit more closely at Diels' arguments in favour of a distinction between hypothetical *Vetusta Placita* and the ingredients of A's purported revision, a difference which in itself does not entail that there were in an earlier phase six books rather than five.

Diels' first distinguishing mark has to do with the 'argumentorum concinnitas', the 'beautiful cohesion of the contents', *DG* 66–67. The cohesion he has in mind is the *systematic arrangement according to affinity of content* of *concise* lemmata, each as a rule carrying one or more *name-labels*, on the microlevel of the individual *chapter* devoted to a specific *topic*. In the majority of chapters A follows the presentation of an older and better source, for 'most correctly he constructed a certain orderly sequence not by means of the *names* of the philosophers, but by that of the affinity between the *tenets*', 'non ex philosophorum nominibus, sed ex opinionum cognatione' (our emphasis). This observation about the difference in importance between tenets and names is valuable and correct, although as we shall see in Section 7 below A tends to place the names(-and-tenets) of the very earliest philosophers in the first lemmata of his chapters, thus paying at least a token tribute to chronology.

The names of the philosophers and scientists (as if obeying Aristotle's dictum in the second chapter of the *De Interpretatione* that parts of names, e.g. those of Kall-ippos, have no meaning) of course offer no clue to the contents of their doctrines, unlike those of famous characters in myth and *belles lettres* such as Oedipus ('him of the swollen feet'), whose *nomen loquens* hints at a crucial part of the tragic narrative in which he is involved.

As a representative example Diels cites 2.13\*,<sup>46</sup> which according to him comprises three parts. Within this 'partitio' (as he calls it) the individual lemmata are connected to each other 'through their external

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<sup>46</sup> Cf. *DG* 178, on the 'affinity of the contents', 'argumentorum necessitudo', characteristic of doxographers, and *ibid.* 179, on the 'inner kinship', 'interior cognatio', of these contents. On 2.13\* see *DG* 66–67 (note that he abridges the lemmata further), where we already find the comparison with Theophrastus' similar method for which see also *ibid.* 105. Diels forgot to cross-refer. For what follows see Part II, Spec. Rec. ch. 25, section 7. For diaeresis see above, n. 5 and text thereto, below, nn. 336, 340, and text thereto. For μερισμός in Aristotle see *Met.* E 4.1027b20–22, in Theophrastus e.g. *Met.* 8a9 (bipartition), and van Raalte (1993) *ad loc.*; for the specifically Stoic distinction between *dihairesis* and *merismos* below, text to n. 204.

similitude', 'ex opinionum externa similitudine', i.e. have been sorted on a gliding scale according to superficial resemblance. Theophrastus, he says, did a better job, looking for such 'partitiones' 'ex intima magis quaestionum subtilitate', 'from a deeper fineness of detail of the issues'. Diels' term *partitio* (which translates Greek μερισμός) in relation to 2.13\* instead of *divisio* is in fact equivalent to diaeresis, since *merismos* may pertain to a division or sorting into two as well as into more than two parts or species. That Diels is thinking of what we have called diaeresis is clear from *DG* 104–105, where he refers to the affinity of doctrines in Theophrastus' discussion of the principles from Plato to Aristotle,<sup>47</sup> uses these two Latin terms interchangeably, and provides a fine analysis of Theophrastus' diaeretic methodology in the *De Sensibus*<sup>48</sup> and of Aristotle's in the second chapter of Book I of the *Physics*.<sup>49</sup> On these pages of the *DG* we glimpse a way to revise Diels' source-directed program, although it remained unrealized. With the benefit of hindsight, what is baffling is precisely his failure to avail himself of this important insight for his reconstruction of sequences of sorted lemmata throughout A in the body of the *DG*.

The majority of chapters thus display what in *DG* 60 he calls the 'limpidus ... Placitorum fons' and *DG* 66 the 'purum Placitorum fontem', 'the clear (or 'pure') source of the [Aëtian] *Placita*', thus providing it with a *Persilschein*, a clean bill of health. These earlier *Placita* in his view were a systematic collection of such terse statements chapter by chapter in a mostly systematic sequence book by book, dealing in Book I with the principles, in Book II with the cosmos and the heavenly bodies, in Book III with meteorological phenomena, in Book IV with the earth, the sea, and the river Nile, in Book V with the soul, and in Book VI with the body. Diels gives no indication what the purpose of this collection might be.

Accordingly one has to strip away the often *anonymous* and at any rate atypically *long and verbose* chapters such as 1.1–2, 1.4 (which takes 1.5 with it), 1.6, 4.11, and 4.21, or similar parts of chapters, such as A at P 1.7.1, and at P 3.5.1–3 ~ S 1.30.1 (3.5.1–9 Diels).<sup>50</sup> This amounts

<sup>47</sup> Also see *DG* 104 n. 4, citing Thphr. fr. 229 FHS&G ~ *Phys. Op.* fr. 8 Diels *ap. Simp.* in *Phys.* 28.31, τὴν τῆς δόξης συγγένειαν. Cf. above, n. 46 and text thereto.

<sup>48</sup> The resemblance between tenets in 2.13\* therefore is not 'external' in itself, but only as compared with that purportedly to be found with Theophrastus.

<sup>49</sup> For *Phys.* 1.2 cf. below, text to n. 340.

<sup>50</sup> Diels is followed by Lachenaud (1993) 25 for part of the material; *ibid.* 22 L. does not exclude a certain amount of 'assemblage' of texts of various provenances.

to stylistic cleansing on the basis of formal traits. Determination by attribution to sources outside the *Placita* tradition is purificatory (i.e. negative) rather than explanatory. These longer and mostly anonymous or mono-lemmatic pieces according to Diels must have been derived from sources outside the tradition of the work called *Vetusta Placita*, i.e. Epicurean works, as e.g. in the case of chs. 1.4 and (ultimately) A at P 1.7.1, or Stoic literature, as e.g. in the case of 1.6, 4.11–12, and 4.21, or a meteorological compendium, as in the case of A at P 3.5.1–3 ~ S 1.30.1, 3.5.1–3, and 3.18.<sup>51</sup> An authentic *placitum* is tersely formulated and carries one or more name-labels, or the words ‘some’ and ‘others’. We should however mention that Diels’ criterium of terseness as a criterium in favour of authenticity breaks down when he comes to speak of the section on the senses, 4.8–18, which apart from chapters based on Stoic sources (4.11–12), provides such a plentiful variety of warring opinions in the other chapters (‘in variarum opinionum pugna velut luxuriantur’) that according to him one has to conclude that A also here adduces sources outside the *Placita* tradition. The lemmata involved however would subsequently have been adapted to the terse *Placita* format (‘ceterorum Placitorum formae utcunque accommodata’), presumably by A, but Diels is not very clear on this point.<sup>52</sup>

We should take sharp notice of Diels’ second distinguishing mark, viz. the presence of warring views that he attributes to influence from beyond the true *Placita* tradition. That not only in these chapters of Book IV but also throughout the *Placita* as a whole views are purposely opposed to each other by means of diaeresis and diaphonia failed to secure Diels’ attention. This is the more remarkable because he was aware of this manner of presenting various views in S: ‘anthologists such as S are delighted by the conflict of positions’ (‘anthologi enim ut Stobaeus argumentorum oppositione delectantur’, *DG* 59). So he posits that qua antilogic procedure the arguments contra and in favour of the existence of the gods in A at P 1.7 reflect a presentation of conflicting arguments in the anthology which (as he hypothesizes more or less out of the blue) was A’s source for the chapter. So A at P 1.7.1 lifted the arguments contra from this anthology and replaced the anthologist’s material for the other side of the issue by material from the genuine *Placita* tradition.

<sup>51</sup> *DG* 58–61, 101.

<sup>52</sup> *DG* 184–185.

This kind of impolite dialectical refutation in Diels' view is foreign to the programme of the *Placita*, 'nam a Placitorum certe instituto distat oratio et dialectica confutatio'.<sup>53</sup> For according to his second distinguishing mark the criticisms addressed at Thales, Anaximander, and Anaximenes found at A 1.2–3 (just as the 'dialectical' atheist argument at P 1.7.1) are also 'contrary to the habitual attitude', 'contra morem', of the true *Placita*, that is to say do not square with its normal reportage *sine ira et studio*, so they muddy the waters of the limpid fount. But explicit objections (ἐνστάσεις) are an indispensable ingredient of a dialectical discussion, and in our view it is rather the fact that they are almost always lacking in the *Placita* that is remarkable than conversely.<sup>54</sup>

A third distinguishing mark is provided by the Ionian and Italian διαδοχαί, 'Successions' of philosophers, briefly described in A 1.3. As already pointed out these Successions belong with a type of literature included in Diels' genre of biography, not with that of doxography, and should therefore be eliminated. This material too according to him has been imported by A, though he believes that the account of the Successions has been somewhat amplified by P at P 1.3.1.<sup>55</sup>

A final distinguishing mark concerns the introductory remarks (proems) of the individual books or sections, and similar concluding remarks, which have to go as well,<sup>56</sup> and so do the anonymous definitions of a topic occasionally to be found at the beginning of a chapter in Book I. We should point out that these definitions as a rule are very brief, so for the most part do not conflict with the terse formulations characteristic of Diels' *Vetusta Placita* from a stylistic point of view. Definitions according to Aristotle and others are concerned with the question of the *ti esti*: what something is. Numerous Aëtian lemmata may be viewed as definitions proposed by particular authorities. A at ch. 1.1

<sup>53</sup> DG 58–59. For 1.7.1 as derived by the hypothetical anthologist from an Epicurean source see above, n. 30.

<sup>54</sup> DG 180–181. Alt (1973) 139 argues that these counter-observations belong with the original contents of 1.3; cf. below, n. 149. At Mansfeld (1992a) 109–111 it is argued that ἐνστάσεις were included in Theophrastus' *Physikai Doxai*, on the evidence of Taurus *ap. Philp. Adv. Procl.* 6.8.27 (Thphr. fr. 241A FHS&G ~ *Phys. Op.* fr. 11 D.). They are certainly part and parcel of Aristotle's dialectical overviews, and are a standard ingredient of Theophrastus' *De Sensibus* (see Baltussen (1992) and (2000a)), which according to Diels is a fragment of Theophrastus' great doxographical treatise (for the title of which see below, n. 334 and text thereto).

<sup>55</sup> DG 61–62. He also believes that references to philosophical Sects are foreign to the true *Placita* tradition, see below, n. 192.

<sup>56</sup> Substantial discussion of these introductory remarks DG 55–58.

states that the study of physics, or things physical, as a matter of course has to begin with a definition of nature, *physis*; see below, Section 6. Not all the definitions found at the beginning of chapters are rejected by Diels; he for instance formulates no objections (to cite two comparatively long lemmata) against the definitions of ‘year’ at 2.32.1\* (anonymous), or those of ‘voice’ at P 4.19.1 ~ S 1.57.1 (attributed to Plato), or against the short one of ‘Milky Way’ at P 3.1.1 ~ S 1.27.1 (where as we note the definiendum is not mentioned in the lemma but in the chapter heading). A’s interest in definitions is also apparent at P 4.8.1, where he cites the Stoic definition of sensation (οἱ Στωικοὶ ὁρίζονται οὕτως τὴν αἴσθησιν), and at P 1.6.1, the first sentence of the chapter, where he cites the Stoic definition of the substance of the divinity (ὁρίζονται δὲ τὴν τοῦ θεοῦ οὐσίαν οἱ Στωικοὶ οὕτως).

Nevertheless Diels also found the proems (‘ipsius scriptoris proemia’, *DG* 101) slight and unsubstantial, and attributed the same stylistic weakness to the brief anonymous definitions in Book I.<sup>57</sup> Accordingly, brevity is a virtue when found in passages deriving from the ‘limpidus fons’,<sup>58</sup> and its opposite when encountered elsewhere.

Diels’ arguments for an original number of six books are not valid. One of them is based on the concluding authorial comment in A at P 3.8.2, ‘The meteorological phenomena [literally: the things on high] having now been outlined by me, the terrestrial phenomena will be approached as well’ (περιγεγραμμένων δέ μοι τῶν μεταρσίων, ἐφοδευθήσεται καὶ τὰ πρόσγεια).<sup>59</sup> He submits that this points to an original distribution over one book each in the *Vetusta Placita* of respectively the ‘sublimia’, or meteorological phenomena, and the ‘terrestria’, or terrestrial phenomena, the two major topics treated together in a single

<sup>57</sup> *DG* 60, ‘disserendi exilitatem’. It would take too long to discuss and attempt to identify the (ingredients of the) definitions here; we note that in some cases we are *more doxographico* or *scholastico* presented with alternatives (no name-labels), viz. P 1.10.1 ~ S 1.12.1 two, P 1.12.1 ~ S 1.14.1a three (in S the third has fallen out), P 1.14.1 ~ S 1.15.3b three.

<sup>58</sup> See *DG* 101 on the ‘brevity and dryness of the *Placita*’, ‘brevitas et siccitas’.

<sup>59</sup> Eusebius summarizes the proem of Book III (on which see below) and the present passage together, *PE* 15.54.3: ‘and about the things in heaven and those on high they [i.e. the philosophers] have opposed each other by means of what we have cited. Spectacular also what they have said about the earth’ (καὶ περὶ μὲν τῶν οὐρανίων καὶ μεταρσίων τοσαῦτα τοῖς δεδηλωμένοις πρὸς ἀλλήλους διεσπασίασται. θέα δὲ καὶ τὰ περὶ γῆς). He then quotes 3.9–11, plus 3.13 with as heading that of the previous ch. 3.12, ‘On the motion of the earth’.

book (viz. Book III) by A, and then of course P. This argument is self-defeating when considered in its larger Dielsian context. All Aëtian authorial pointers are eliminated from the *Vetusta Placita*, except the remark that concludes P 3.8, which becomes the proem of Book IV of the hypothetical earlier work.

Another, more complicated argument for six original books has an uncertain basis, as Diels admits himself. He believes that a (lost) work of ‘a certain Celsus’<sup>60</sup> in six books, briefly described by Augustine in the preface of his *De Haeresibus*,<sup>61</sup> resembles the (reconstructed!) *Vetusta Placita* ‘the way one egg resembles another’ (‘non ovum ovo similius’). But the structure and style of this hypothetical work only become to some extent the same as that of Celsus’ lost treatise after the sections and passages condemned as Aëtian contributions (especially, we may point out, the rare instances of arguments contra) have been eliminated, for only then will Augustine’s description fit, from which the ‘conciseness of expression’, *brevitas sermonis*, and objectivity of presentation (*nec redarguit aliquem*) attributed to Celsus are singled out for special mention by Diels. The argument thus threatens to become circular. Note moreover that according to Augustine, Celsus presented the views of philosophers who were the *founders* of *sects* (schools), *qui sectas varias condiderunt*, which does not happen in A, at least not in this way.

The hypothesis of these earlier *Placita* in *six* books can be rejected with confidence. One suspects that Diels is not so much concerned with the number of books of the earlier work as with the characteristic features of Celsus’ treatise which, as he wants to believe, are also typical

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<sup>60</sup> Almost certainly Aulus Cornelius Celsus, whose extant *De Medicina* as to systematic presentation is quite different from the *Placita*. Mejer (2000) 31, perhaps following Courcelle (1948) 179–181, suggests that Augustine means Celsinus (*Suda* K 1350), to be dated to the 4th century CE, an identification already rejected by Diels *DG* 184 n. 1, now also by e.g. Solignac (1992) 92–93 and (1996) 533–536, who follows Diels’ source-analysis (cf. Solignac (1958) 138–148). The word *quidam* should not mislead, cf. *Conf.* 3.4.7 *perveneram in librum cuiusdam Ciceronis*, *Serm.* 105.10, *poeta illorum quidam* introducing a Virgil quotation; see Hübner (2007) 248 with n. 6. Augustine says Celsus went ‘as far as his own time’ (*usque ad tempora sua, neque enim plus poterat*); one should not, *pace* Courcelle (o.c. 180), interpret this period as being contemporary with Augustine’s, for then why add ‘he could go no further’? Surely, what is meant is that the book was far from up to date.

<sup>61</sup> August. *Haer.* praef. 5, CCSL 46, 288, text quoted *DG* 184 from *PL* by Diels. In the next paragraph Augustine speaks of the treatise *On Sects* of Epiphanius, also in ‘six books’, ‘short ones’. He used the (spurious) *Anakēphalaiōsis*, not the immensely large *Panarion*.



of the *Vetusta Placita*. The arbitrary elevation of the authorial remark at P 3.8.2 to the status of proem to Book IV of the earlier work is merely a subsidiary move.

Nevertheless, Diels' point about differences of style and presentation between various sections of the Aëtian *Placita*, also noticed by some of his predecessors, is well taken. We should already note however that the extreme conciseness characteristic of the majority of lemmata in Books I to IV—though even in these books there are exceptions, e.g. A at S 1.1.29b (Xenocrates), 2.20.13\*, A at S 1.1.29b (Democritus), at S 1.50.5, etc.—is no longer such a strikingly dominant feature in Book V. For Book V the evidence of S is almost entirely lost, but even in P's epitome the lemmata dealing with human biology and similar subjects are long to quite long compared to the typically terse lemma in one of the earlier books. In fact the important Varronian parallels in Censorinus' *De Die Natali* for part of the contents of Book V which according to Diels should be associated with the earlier redaction he called *Vetusta Placita*<sup>62</sup> are, as to their length, closer to the lemmata of the earlier books than to those of Book V. Chrysippus moreover refers to a version of 4.5, 'On the regent part', which seems to have consisted of brief lemmata. Such limited evidence as is available for pre-Aëtian *Placita* suggests that (then as now) several doxographical works were current at the same time. Information in the chapter 'On sight, how we see', A at P 4.13.3 ~ S 1.52.5 plus A at S 1.52.6, suggests the availability to A of different versions of a lemma, one with one name-label only (Hipparchus), thus resembling the poverty of P, the other generously adding two more name-labels, thus resembling the riches of S; see below, Section 16.<sup>63</sup>

So we may leave Diels' *Vetusta Placita* and now describe the macro-structure, that is to say the topics of the five books of A's treatise in some more detail. After the introductory paragraphs the first book deals with the principles/elements, God and the gods, and a series of concepts in theoretical physics such as matter, idea, shape, cause, place, fate, and necessity. As a rule these conceptual items (one is tempted to call some among them, e.g. the concept of 'idea', metaphysical, or second-order) are illustrated with examples from the wider realm of physics. The second book deals with the cosmos in general and celestial phenomena.

<sup>62</sup> *DG* 188–198.

<sup>63</sup> For P 4.13.3 ~ S 1.52.5 + S 1.52.6 see below, text to nn. 398, 403, for Chrysippus' quotation nn. 216, 225 and text thereto.

The third is about atmospheric phenomena, the earth, and the sea. The fourth deals with the river Nile, the soul, the senses, speech, and breath. The fifth, among other things, is about dreams, procreation, embryology, sterility, living beings, sleep, growth, health, illness, and old age.

This amounts to quite a full account of the *physikos logos*, consisting of for the most part very concise renderings of the various doctrines, ἀρέσκοντα, *placita* ('things held', 'agreed'),<sup>64</sup> in the large field of physics, from principles to old age, attributed to philosophers, physicians, *mathematikoi* (astronomers, but in A at P 5.18.6 astrologers), a tragic poet (Euripides, A at P 1.7.1 ~ 1.7.2 Diels), a grammarian (Crates, A at S 1.38.7), a 'writer' (Herodotus, A at P 4.1.5), or a 'historian' (Ephorus, A at P 4.1.6). P's book-title only mentions the philosophers.

The structural order of these books and of the subjects contained in them corresponds, rather roughly, to that of the subjects treated in Plato's *Timaeus*, or somewhat more clearly to that of the lecture and/or study course described in the proem of Aristotle's *Meteorology*, and of the succession of topics from principles to causes of health and disease ascribed to the majority of early philosophers of nature and accepted as the norm in Aristotle's *De Sensu* and elsewhere.<sup>65</sup>

If we are allowed to combine pieces of information found in various sources this Aristotelian account as well as arrangements of subject matter that are parallel to it are confirmed by Megasthenes. At Clement, *Strom.* 1.72.5 ~ *FGrH* 715 fr. 3 Book III of the *Indica* is quoted verbatim: 'everything said about nature one finds with the ancients (ἅπαντα τὰ περὶ φύσεως εἰρημένα παρὰ τοῖς ἀρχαίοις) is also said by those who practise philosophy outside Greece, among the Indians by the Brahmins and in Syria by the so-called Jews'. Megasthenes was in India around 300 BCE, so his 'ancients' will be the Presocratics and

<sup>64</sup> For this term cf. the title cited Section 2 *ad init.*, A at S 1.1.29b p. 36.14 W. (Xenocrates) ἀρέσκει δὲ καὶ αὐτῷ, at P 5.29.1 (cf. below, text to n. 195) ἀρέσκει δ' αὐτῷ, and see Vol. 1:324–327, and *ibid.* 1:250, where it is pointed out that ἀρέσκει is rare in A and more often found in AD. For the quite common formula *physikos logos* in the sense of 'physical part of philosophy' or 'physical argument' see above, n. 21 and text thereto, and Section 8, *init.*, and for some examples below, n. 334.

<sup>65</sup> Arist. *Sens.* 1.436a17–b2, cf. *Resp.* 21.480b22–31, see Mansfeld (1990a) 3059 with n. 3, 3058–3060, Lennox (2005) 66–68. For the parallel of the macrostructure of A with the account in the proem of the *Meteorology* see e.g. Waiblinger (1977) 24–25, for *Timaeus* and *Meteorology* Vol. 1:136–137; cf. Riedweg (1994) 254–255 on the influence of the *Timaeus* on the sequence in the *Placita* and Alcinoüs (see below, n. 71). For the *Parva Naturalia* see below, text to n. 226.

perhaps include the Plato of the *Timaeus*. A passage in a long report in Strabo, 15.1.59 ~ *FGrH* 715 fr. 33, the occasional Stoicizing colouring of which may be due to the reporting author, tells us more about the philosophy of nature (τὰ δὲ περὶ φύσιν) of the Brahmins. According to Megasthenes the Brahmins ‘prove many of their points through myths’ (διὰ μύθων τὰ πολλὰ πιστουμένους), a point which is well taken. He finds this a bit silly (τὰ μὲν εὐήθειαν ἐμφαίνει, ‘some of their opinions indicate mental simplicity’). But even so they are ‘largely in agreement with the Greeks on numerous subjects’ (περὶ πολλῶν δὲ τοῖς Ἑλλήσιν ὁμοδοξεῖν). Their account begins with cosmology. ‘The Brahmins, too, say that the cosmos is generated, destructible, and spherical’ (ὅτι γὰρ γεννητὸς ὁ κόσμος καὶ φθαρτὸς, λέγειν ἀκκείνους, καὶ ὅτι σφαιροειδής). The God who made it ‘pervades the whole of it’, δι’ ὅλου διαπεφοίτηκεν αὐτοῦ—Stoic language presumably pertaining to Brahma. There are five elements, as in later Indic thought, for in addition to the ‘four elements’ there is ‘a fifth nature’ (πέμπτη τίς ... φύσις) of which the heaven and the stars are made, which is wonderfully compatible with Aristotle’s aether. These elements of all things differ from water as the element of cosmogony (ἀρχαὶ δὲ τῶν μὲν συμπάντων ἕτεραι, τῆς δὲ κοσμοποιίας τὸ ὕδωρ), an authentic Vedic notion compatible with Stoic thought. The earth is situated in the centre of the cosmos. The account then deals, or rather ends, with ‘semen and the soul’, subjects on which similar things [i.e. similar to those said by the Greeks] are said as well, but also a number of other things’ (καὶ περὶ σπέρματος δὲ καὶ ψυχῆς ὅμοια λέγεται, καὶ ἄλλα πλείω). ‘They blend in myths, too, about the immortality of the soul and the judgements in Hades and other such things, just like Plato’ (παραπλέκουσι δὲ καὶ μύθους, ὥσπερ καὶ Πλάτων περὶ τε ἀφθαρσίας ψυχῆς, καὶ τῶν καθ’ ἅδου κρίσεων, καὶ ἄλλα τοιαῦτα). The neat systematization and demythologizing *interpretatio graeca* of the various stories he will have been told by *pandits* are of course due to Megasthenes. This highlights the predominance of the model he is following.<sup>65a</sup>

<sup>65a</sup> On Megasthenes on the philosophy of the Brahmins and its Indic and Greek ingredients see Stein (1932) 261–264, who seems to us somewhat too skeptical where the Indic basis is concerned. For water as the primordial matter according to the *Rgveda* and the five elements of later philosophy see e.g. Apte (1951) 380. The explicit reference to spermatology in Megasthenes fr. 33 is noteworthy, cf. below, n. 289. The ‘generated, destructible, and spherical cosmos’ of the Brahmins is precisely paralleled by that of the Egyptians at D.L. 1.11, Hecataeus of Abdera in Book I of the *On the Philosophy of the Egyptians*, fr. B6 DK ~ *FGrH* 264 fr. 1, τὸν κόσμον γεννητὸν καὶ φθαρτὸν καὶ σφαιροειδῆ, the only other example of these three adjectives together.

Returning to Aristotle we cite the beginning and end of the famous proem of the *Meteorology*, where according to the precise account of Jacques Brunschwig he starts with the most general principles, and then follows a descending order from the heavens to the earth and the living beings:<sup>66</sup>

We have already dealt with (1) the first causes of nature [cf. *Physics*] and with all natural motion [esp. *Phys.* Books V–VIII]; (2) we have also dealt with the ordered movement of the heavenly bodies above [cf. *Cael.* Books I–III], (3) and with the corporeal elements, their number, kinds and mutual transformations, and with coming to be and passing away in general [cf. *Cael.* Books III–IV and *GC*]. It remains to deal with a subdivision of this inquiry, which the earlier thinkers have called ‘meteorologia’.

(4) [...] <sup>67</sup>

(5) After we have dealt with these (meteorological) subjects, let us see if we can give some account, in accordance with the method indicated, of animals [cf. the zoological treatises] and plants [cf. *De Plantis*, lost, or Theophrastus’ botanical works].

One of the riddles of this passage is the absence of an explicit reference to the *On the Soul*. It has been argued that soul is implied because animals are mentioned. Against, it has been argued that the part of the *On the Soul* dealing with human thought is situated beyond the confines of the inquiry into nature.<sup>68</sup> The first sentence of the first chapter of the *De Sensu*, however, informs us that the inquiry into animals and all things having life (i.e. plants) follows on that on soul. This issue cannot of course be appropriately discussed, let alone solved, in our present context. It is, however, important to be aware of the fact that the

<sup>66</sup> Arist. *Mete.* 1.1.338a20–339a10, tr. Lee, slightly modified. Brunschwig (1991) 26 speaks of ‘un immense programme de recherche et d’enseignement, [...] commençant par les principes les plus généraux, et observant ensuite un ordre descendant, depuis les cieux jusqu’à la terre et à ses habitants les plus remarquables, les êtres vivants’. For discussion of this proem see now Burnyeat (2004b) 13, 20, Lennox (2005) 60–61, Falcon (2005) 2–22.

<sup>67</sup> An incomplete overview follows: (4), topics to be discussed in meteorology from Milky Way to earthquakes, but no reference to the rainbow etc. of Book III. See below, text to n. 69, n. 106 and text thereto.

<sup>68</sup> For the position of the *On the Soul* in the series of Aristotle’s treatises, or in his curriculum (and in the proem of *Mete.*), see Brunschwig (1991) 26 and Burnyeat (2002) who, like Lee in a footnote in the Loeb *Meteorology*, argue in favour of an implicit reference, and Rashed (2004), Lennox (2005), and Falcon (2005) 1–29, who argue against. Rashed collects evidence suggesting that Aristotle changed his mind as to the order of the psychological and biological works.

position of the *On the Soul* (esp. as to its account of mind and cognition) in the series of Aristotle's treatises is problematic, even if the missing reference in the proem of the *Meteorology* is discounted. On the other hand, one cannot be sure that the absence here of a reference to the psychological treatise is as significant as it has been made out to be. Aristotle's overview of physics is not a detailed table of contents. It is only relatively complete in announcing the subjects to be treated in the meteorological part of the inquiry, but we note that only most of the themes of Books I to Book III ch. 1 are listed. There is no reference to the important treatment of the rainbow and similar phenomena of reflection in Book III, chs. 2–6.<sup>69</sup>

In the *Placita* there is no problem: the psychology in Book IV comes after the meteorology in Book III and before the (mostly human) biology in Book V. Which means that it occupies a position corresponding to that which an implicit reference to the *On the Soul* in the proem of the *Meteorology* would have had, or has, according to those who are convinced such a reference should be assumed. Now one source, Themistius in *An.* 108.11 ~ Thphr. fr. 265 1a FHS&G, informs us that the fifth book of Theophrastus' *Physics* is the second of his *On the Soul*. This entails that Theophrastus' *On the Soul* had been integrated into his *Physics*—but we do not know that he had done so himself. It may well have been a later editor who wished to give the treatise an appropriate position.

Several times in the Sections that follow we shall encounter the impact of Stoic thought upon the arrangement and part of the contents of the *Placita*. The psychology in Book IV also comprises parts of chapters dealing with cognition such as the two lemmata of a chapter 'On mind' (cf. the heading of S 1.48) added from S by Diels at the end of A 4.5, and includes the important cognitive chapters 4.11–12 on perception, concept formation, thought, presentation, and the criterium according to the Stoics. Inclusion of such matters in the inquiry into nature may have been somewhat difficult in a Peripatetic context. In a Stoic context there is no difficulty, for (as Chrysippus is claimed to have said) when teaching one part of philosophy you are allowed to adduce from another part what you need for the purpose of your exposition, and 'some' Stoics are said to have taught the parts of philosophy simultaneously.<sup>70</sup>

<sup>69</sup> See above, n. 67 and text thereto.

<sup>70</sup> Chrysippus *On the Use of Reason ap. Plu.* SR 9.1035E (~ FDS fr. 25 Hülser), anony-

The order of themes in the books and chapters of the *Placita* is not historical or chronological, but in the first place systematic. First the principles and theoretical issues, as in A Book I. The *descensus* or descriptive development of the account of the cosmos beginning with the first chapter of Book II, moving so to speak *a capite ad calcem* downwards from the circumference of the cosmos to the interior and from macrocosmos to microcosmos, or from nature in general to the nature of man, is paralleled in numerous other writings. This is in fact a very traditional order, attested by Aristotle at the beginning and the end of the *Parva Naturalia* for the majority of the physicists and the better medical writers, and for his own writings or lecture course in the proem of the *Meteorology*, as we have seen a moment ago. This order also underlies a passage in the first chapter of the *De partibus animalium*, where Aristotle tells us that the early philosophers inquired about the nature and quality of the material cause, then about the moving cause ('Strife or Love or Intellect or the Spontaneous', so Empedocles, Anaxagoras, and the Atomists) and about cosmogony, and in a similar way about the coming to be of animals and plants.<sup>71</sup>

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mous Stoics *ap.* D.L. 7.40 (~ *SIF* 2.41); see the comments of Babut in Casevitz & Babut (2004) 33 nn. 76–78 (pp. 131–134).

<sup>71</sup> See brief remarks at Runia (1997) 97; further already e.g. Kroll (1930) 2 on the disposition of the cosmology of Pliny the Elder as derived from a handbook, as proved 'durch die Übereinstimmung mit den Doxographen', and esp. Hübner (2002) on a number of writings including A. Festugière (1945) compared the *Pythagorean Hypomnemata* of Alexander Polyhistor *ap.* D.L. 8.24–31 with the order of Diels' *Vetusta Placita* (cf. below, n. 289); Mansfeld (1971) 130–136 added the introductory section of the ps.Hippocratean *On Sevens*. Comparison of sequences in A, Alcinous, Apuleius *De Platone* I, Diogenes Laërtius Book VII, and other texts in Giusta (1986), and in Lachenaud (1993) 47–50, and 51 on the meteorology (comparing *Plac.* Book III with Seneca, Aristotle, ps.Arist. *De Mundo*). Note however that the progression according to the restored book order of Seneca's *Naturales Quaestiones* (in the parts of the cosmos treated in that work) is the reverse, viz. from terrestrial waters via water in the atmosphere, winds, and earthquakes to comets and meteors, see Codoñer (1989) 1800; *ascensus* order also Nemes. *Nat.Hom.* ch. 5, 47.5–6 Morani: 'earth water air fire, arranged according to the formulated order from below to above' (ἀπὸ τῶν κάτωθεν ἐπὶ τὰ ἄνω). On lists in ascending or descending order see De Lacy (1996) 46, who links the ascending order with the order of elemental change (earth into water etc.), but this is not always the reason; the concentric elemental layers can be described starting from above or from below. For the *descensus* order compare the announcement at Alcin. *Did.* 8.1, 162.24–28 H.: the subjects to be treated in (Timaeon) succession are first 'the principles, and questions of theology' (cf. A 1.3 + 6–7), thus 'beginning from above' (ἀνωθεν), and then the rest: 'descending' (κατιόντες) from these (principles) to examine the origin of the cosmos, and ending with the origin and nature of man' (tr. Dillon, modified; cf., roughly, A Books II–V). Galen *De Propriis Placitis* ch. 2 is about the cosmos, ch. 3 about the soul (see now the

In the cosmological part of A, Books II–III, the sequence of the elemental spheres is, roughly, from fire via air and earth to water. We should observe that in the treatise the moist element at 3.16–17 plus 4.1 is treated *after* the earth at 3.9–15, whereas treatment according to the sequence of cosmic layers would have resulted in its treatment *before* earth. In the chapter ‘On the order of the cosmos’, 2.7\*, the *descensus* order is present in several lemmata, viz. 2.7.1\* *ad fin.*, name-label Parmenides (this part S only): ether—heaven—the earthly regions; 2.7.4\* (P only), Plato, fire/aether—air—water ‘and earth is last’; 2.7.5\* (longer in P), Aristotle, ether—fire—air—water—‘and earth is last’.

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edition of the Greek text by Boudon-Millot & Pietrobelli (2005)). See also Part II, Spec. Rec. *Praef.* On the different order in Lucretius and Epicurus (*Ep.Hdt.*), viz. psychology before cosmology and meteorology, see Runia (1997) 96–97. For Aristotle’s testimony see *PA* 1.1.640b4–15, and for the passages from the *Parva Naturalia* below, text to n. 226.

#### 4. *Authorial Comments on Purpose and Sequence*

*Summary.* Among the material Diels wanted to remove from the *Placita* as later additions are almost all authorial remarks announcing themes that are to be treated. We argue, however, that the position of the introductory note concerned with the distinction between reality and appearance at 3.5.1, which would have been more appropriately placed at the beginning of the meteorology at 3.1, reflects the postponed emphasis on this distinction in Aristotle's *Meteorology*. So Aëtius is indebted to a tradition, and the authenticity of the note at 3.5.1 supports that of the other structural indicators. These markers are compared with the explicit division into three parts of themes in natural philosophy according to Seneca's *Naturales Quaestiones*, which correspond with chapters in Aëtius Books II to V.

We shall find out more about the format of the Aëtian *Placita* by studying the authorial comments pertaining to the sequence of subjects or their character to be found throughout the work. To begin we should mention the use of the first person plural and singular where A addresses his readership, thus referring explicitly to his own activity *as an author*. Thus A at P 1.*Praef.*1 DG 273a7 'we believe' (ἡγούμεθα), 273a9 'that we see' (εἰδῶμεν), and at P 1.1.1 DG 274.20, 'I believe' (ἡγοῦμαι), all in the introduction to the treatise. Similar authorial remarks to the readership occur in transitional passages, viz. A in the proems of Books II and III, 2.*Praef.*\* and 3.*Praef.* 'I shall turn to' (τρέψομαι), 3.*Praef.* 'I shall begin' (ἄρξομαι), and in the proem to Book IV, 4.*Praef.* 'I shall continue' (διαβήσομαι).

Most of the transitional points are separate paragraphs, i.e. are semi-paratextual, though some are still firmly embedded. As we shall see, some are in both P and S, but the majority are found in P only. Insofar as these comments pertain to the macrostructure of the treatise this is not surprising, because the so-called *Eclogae Physicae* (the first book of S's *Anthology*) has its own and different methodology.<sup>72</sup> S had little or no use for these markers, and therefore omitted almost all of them. On

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<sup>72</sup> See Vol. 1:213–238.



the basis of his analysis of the stylistic and presentational differences between the Aëtian *Placita* and the postulated *Vetusta Placita* Diels, as we have seen in Section 3, believed them to be Aëtian accretions. But even if one accepts that the difference between long and often anonymous lemmata or mono-lemmatic chapters on the one hand and chapters consisting of well-arranged mostly brief lemmata with name-labels on the other has to be explained as due to the addition of material from outside the tradition of the *Placita* by an incompetent compiler, it by no means follows that the authorial markers, or the definitions found at the beginning of some chapters, must also to be seen as willful Aëtian accretions. We moreover have seen in the previous Section that Diels himself makes an exception for the announcement for A at P 3.8.2. He attributes this to the *Vetusta Placita*. Furthermore, provenance from, say, a Stoic source outside the true *Placita* tradition is not a sufficient explanation for the presence in the *Placita* of a chapter (or lemma) representing a particular topic at precisely the place where it is situated.

We should begin with a remark pertaining to the structure of the account of meteorological phenomena in Book III, at the beginning (i.e. as the first Dielsian lemma) of its fifth chapter, ‘On the rainbow’, A at P 3.5.1 ~ S 1.30.1: ‘Of meteorological events some come about in reality, such as rain, hail; others are mere appearances without possessing a reality of their own.’<sup>73</sup> In the four preceding chapters an imposing array of meteorological phenomena, among which ‘rain’ and ‘hail’, have already been presented. Diels is shocked: ‘don’t we catch the author writing a proem as if he had not yet touched upon meteorology? What author is so depraved as to put the introductory chapter fifth?’<sup>74</sup> He concludes that A inserted this introduction at precisely this point because the larger part of ch. 3.5 about the rainbow, transcribed next, does not derive from the limpid fount but has been adduced from somewhere else, so A took over the introductory remark from outside

<sup>73</sup> τῶν μεταρσίων παθῶν τὰ μὲν καθ’ ὑπόστασιν γίνεται οἷον ὄμβρος χάλαζα, τὰ δὲ κατ’ ἔμφασιν ἰδίαν οὐκ ἔχοντα ὑπόστασιν. What follows is also in both P and S: ‘When we are aboard a ship the immediate effect is that the land seems to move. Well, the rainbow is according to reflection’ (αὐτίκα γοῦν πλεόντων ἡμῶν ἡ ἡπειρος κινεῖσθαι δοκεῖ· ἔστιν οὖν κατ’ ἔμφασιν ἡ ἰρις). The example of the optical illusion can be used for skeptical purposes, but is not so used by A. For the analogy cf. Cic. *Div.* 2.120, *nam et navigantibus moveri videntur ea quae stant*, *Luc.* 81, *Lucr.* 4.386–390, *Sen. Nat.* 7.25.7, *S.E. P.* 1.107–108, *M.* 7.414; see Schrijvers (1992) at (1999) 174 with n. 15.

<sup>74</sup> *DG* 60, ‘nonne prooemiantemprehendis quasi sublimia nondum attigerit? quis autem scriptor tanta est pravitae ut illud caput quo introducimur quinto loco collicet?’ For Diels’ view see further *DG* 60–61.

the *Placita* tradition as well. Furthermore, as we have already seen in Section 3 above, at the end of the brief chapter 3.8 (which contains only a single doctrinal lemma) the treatment of meteorology is said to be complete ('the meteorological phenomena now having been outlined by me, the terrestrial phenomena will be approached as well'). Yet to Diels' dismay (*DG* 60–61) chapter 3.18, on the halo, a meteorological phenomenon, follows at the end of Book III, after the treatment of the terrestrial phenomena has ended with 3.15, earthquakes, and 3.16–17, the sea.

This indeed at a first glance somewhat surprising position of the chapter on the halo, extant in P only, can be explained. One possibility is that P or already A first omitted it, then decided to add it at the end of the scroll, or at least of the book. The fact that in Aristotle's *Meteorology* the sea is discussed in Book II (chs. 1–3), and earthquakes too are discussed there (chs. 2.7–8), while the rainbow and halo are discussed together in the next book (3.2–5), may also have played a part. A agrees with Aristotle in placing the halo after the earthquakes, but differs in placing the rainbow (3.5) before the earthquakes (3.15). In Theophrastus' *Metarsiology* the chapter on the halo of the moon comes before that on earthquakes,<sup>75</sup> but according to Theophrastus the halo is real, not a phenomenon of reflection as in Aristotle, and his chapter on the rainbow (if it ever existed) is no longer extant, so we do not know where in his narrative to place the rainbow. One could say that in A the treatment of the rainbow has been moved forward, and that of the halo left at the end. One's impression is that as to these matters the tradition was not uniform. But moving the rainbow chapter forward should have brought the halo chapter along, so its having first been left out and then added at the end of the book remains the more likely hypothesis.

Even so, Diels' view of the introductory comment of A 3.5 is mistaken. In the first place, the contrast between reality and appearance (or the de facto diaeresis of subsistence and reflection), of crucial importance in the case of meteorological phenomena, can be traced back to at least Aristotle's *Meteorology* and is also found *desertis verbis* as a standard distinction in e.g. the *Scholia in Aratum Vetera*, Seneca's *Naturales Quaestiones*, or the part of ps.Aristotle *De Mundo* comparable to the meteorological part of A.<sup>76</sup> In Aristotle and this ps.Aristotle, and often in Seneca as well, such markers are still embedded in the text. Secondly, and more

<sup>75</sup> See below, text to n. 251.

<sup>76</sup> Some parallels listed Lachenaud (1993) 265 n. 4.

importantly, in Aristotle's work too the diaeretic contrast between real and apparent meteorological phenomena is only emphasized as late as the second chapter of the third book, where in chs. 3.2–5 the rainbow and similar phenomena are discussed, to be explained by means of reflection.<sup>77</sup> It occasionally plays a part in the earlier books, just as in the earlier chapters of A Book III.<sup>78</sup> In the *De Mundo*, too, it is introduced only near the end of the meteorological section, 4.395a29–32, and exactly before the section on the rainbow, just as in the *Placita*. A does not innovate in this respect but in fact complies with the tradition by formulating the foundational diaeresis not right away but quite some time later.<sup>79</sup>

As for ch. 3.5, beginning in the first lemma with the authorial remark on the distinction between subsistence and reflection, and more especially A at P 3.5.3 ~ S 1.30.1, the long section without name-label on the rainbow—both according to Diels inserted from elsewhere—we can stand his argument that quoting the account of the rainbow brought that of the introductory remark with it on its head. Quite the reverse: A is aware of the fact that the diaeresis is expressed a bit late in the day, knows that it is important, but follows the tradition in expounding it at this juncture. To underline what it means he provides a long account of a stunning phenomenon of reflection, the rainbow, which for the most part turns out to be an abstract of Aristotle's account of the phenomenon (we cannot here deal with the details).<sup>80</sup> Though this may well have been taken from a meteorological source that contained excerpts from Aristotle's account of the rainbow, as Diels thought, it was done for a reason. And the fact that these lemmata illustrate the main diaeresis allows this 'Aristotelian' part of the chapter to remain anonymous.

This ancestry of the distinction between subsistence and reflection and these parallels imply that also the contents of a related passage, viz. one about phenomena that are a blend of reality and appearance, will go back a long way. This is what A writes at P 3.6.1, a mono-lemmatic

<sup>77</sup> Explicitly *Mete.* 3.2.372a17–21. But virtually the whole of *Mete.* Book III is devoted to phenomena caused by reflection.

<sup>78</sup> Contrasting tenets in both main sources, e.g. P 3.1.2 ~ S 1.27.2 cf. Arist. *Mete.* 1.8.345a14–19 opposed to 345b10–12 (cf. below, n. 380), P 3.2.1 ~ S 1.28.1a cf. *Mete.* 1.6.342b34–35 opposed to 342b36–343a5.

<sup>79</sup> For the details, and references to earlier literature, see Mansfeld (2005a). For the parallel deficiency in A 1.3 see below, text to n. 111.

<sup>80</sup> See Mansfeld (2005a).

and anonymous item preserved only here: ‘Streaks of light and mock suns occur through a blend of reality and appearance; the clouds are seen, but not in respect of their own colour, but in that of another colour, a mere appearance which is visible. With all these phenomena what happens is to the same degree intrinsic and adventitious.’<sup>81</sup> This noteworthy blend, or compromise view, too, can be paralleled in Aristotle’s treatise<sup>82</sup> and the related literature cited above. The structure of the cluster of meteorological chapters A 3.1–8 plus 3.18 is in fact determined by this largely traditional contrast between reality and appearance, some phenomena being real, others (according to some authorities or in actual fact) mere appearances, or a blend of both, though even in Aristotle this is not made clear in an explicit way right from the start. After all, the famous proem of the *Meteorology* is silent about this diaeresis, even though it is demonstrably foundational for the entire treatment.<sup>83</sup>

The fact that structural indicators such as these belong with the tradition suggests that we should consider the other authorial remarks concerning the macrostructure of the work Diels attributed to A in the same light. Quite abundant and more or less contemporary parallels which we may well call semi-paratextual are provided by the ingredients of Seneca’s detailed tripartite division in the proem of the last book (according to the book order as restored) of the *Naturales Quaestiones*, 2.1. Here he discusses the division and subdivisions of what he calls ‘the whole inquiry about the universe’, *omnis de universo quaestio*, a formula taken up in the next chapter, *Nat.* 2.2, with the words ‘the whole subject of the nature of things’, *omnis rerum naturae materia*. Seneca is a Stoic. The Stoic *physikos logos* (D.L. 7.132–133) will be dealt with below, Section 8, *ubi vide*. However, a point that may be anticipated here is that Seneca fails to present us with an account of the inquiry about the universe as a whole. The first half of the Stoic *physikos logos*, its so-called ‘eidetic’ subsection, is about themes such as principles and gods and space that are also represented in Book I of the *Placita*. In Seneca’s division

<sup>81</sup> τὰ κατὰ τὰς ῥάβδους καὶ ἀνθηλίους συμβαίνοντα μίξει τῆς ὑποστάσεως καὶ ἐμφάσεως ὑπάρχει, τῶν μὲν νεφῶν ὀρωμένων, οὐ κατ’ οἰκεῖον δὲ χρῶμα, ἀλλ’ ἕτερον ὅπερ κατ’ ἔμφασιν φαίνεται. ἐν δὲ τούτοις πᾶσι τὰ τε κατὰ φύσιν καὶ τὰ ἐπίκρητα ὁμοία συμβαίνει πάθη.

<sup>82</sup> In Aristotle the ‘chasms, trenches and blood-red colours’ in the sky are de facto such a mixture: the phenomena are in part produced by ‘reflection’ (ἀνάκλασις, *Mete.* 1.5.342b6, 11), while their ‘substance’ (οὐστας) ‘only lasts a short time’ (342b13–14).

<sup>83</sup> Cf. below, n. 106 and text thereto.

at *Nat.* 2.1 these themes are absent. What he gives us here can only be compared with Books II to V of the *Placita*, parallels for a number of themes which are to be found in the second half of the Stoic *physikos logos*, the so-called generic division, more especially in its subsections ‘on the cosmos’ and ‘causal explanation’.

Seneca divides the inquiry into *caelestia*, questions relating to what is in the heavens, *sublimia*, meteorological issues, and *terrena*, questions concerned with the earth.<sup>84</sup> In the next Section we shall see in more detail that A too uses this diacresis.

The ‘first part’ (*prima pars*) of Seneca’s division, corresponding to chapters in A’s Book II<sup>85</sup> but also mentioning themes not paralleled there, deals with:<sup>86</sup>

the nature of the heavenly bodies and the size and shape of the fires which enclose the cosmos [cf. A 2.13–14\*];

whether the heavens are solid and made up of firm and compact matter, or woven together from subtle and thin material [cf. A 2.11\*];

whether it is moved or imparts motion,

and whether the stars are beneath it or fixed in its structure [cf. A 2.15\*];

how it maintains the seasons of the year [cf. A 2.19\*], turns the sun back [cf. A 2.23\*]—and, in short, other issues like these.

The ‘second part’ (*secunda pars*), corresponding to chapters in A Book III, deals with:

the phenomena occurring between the heaven and the earth, such as clouds, rain, snow [cf. A 3.4], wind [cf. A 3.7], earthquakes [cf. A 3.15], lightning [cf. A 3.3], and ‘thunder [cf. A 3.3] which will move the minds of men’ [Ovid *Met.* 1.55],

and whatever the air does or undergoes. Such phenomena we call *sublimia* because they are higher than phenomena below.

The ‘third part’ (*tertia pars*), roughly corresponding to A 3. 9–17 plus 4.1 plus 5.25, deals with:

<sup>84</sup> Excellent commentary on this proem against the background of the tradition starting with Aristotle’s *Cael.* and *Mete.* and including A at Hine (1980) 124–143. Impressive sequence of parallels for *quaestiones* esp. in the Roman poets *ibid.* 127–128. The text translated above is that of Hine’s Teubner edition. For issues in the Stoic *physikos logos* parallel to those cited by Seneca see also below, Section 8.

<sup>85</sup> Cf. chapter headings in Part II, Spec. Rec.

<sup>86</sup> *Nat. Quaest.* 2.1.

waters [cf. A 3.16–4.1], earths, trees, plants [cf. A 5.26], and—to use a legal term—everything contained in the ground.<sup>87</sup>

We should note the absence here of the topics of large sections of A, viz. those concerned with the soul, the senses, human biology, etc. The themes of A Books IV and V are spectacularly *underrepresented* in this account of the *omnis de universo quaestio*, or *omnis rerum naturae materia*. And in contrast to A Seneca does not proceed from the *caelestia* via the *sublimia* to the *terrena*, but the other way round.<sup>88</sup> He also deals neither with the *terrena*, in the narrow sense of the word, nor with the *caelestia* (there is no need to believe, as some scholars have done, that some books of the treatise are lost). Compared with A Seneca's treatise only offers *capita selecta*. Because the otherwise quite full list of contents and well-arranged order of subjects as formulated in the proem of *Naturales Quaestiones* Book II are so strikingly different from Seneca's own narrative, we should conclude that its contents and main sequences are largely traditional. Thus both A and Seneca (as to this proem) follow standard practice, and use standard terminology.<sup>89</sup>

One should of course also take into account that embedded formulas indicating what a work, or a part of a work, is about, or that a discussion of a topic is about to begin, or has been concluded, are *de rigueur* in prose works. They are found for instance in Herodotus, and also in Aristotle's treatises, and in historical and technical writers who at the beginning of a new book or section provide quite detailed summaries of what came before and what is to follow.<sup>90</sup> The letter of dedication of

<sup>87</sup> Tr. Corcoran, slightly modified. For Seneca's sequel, dealing with the question where to discuss the earth, see below, Section 9.

<sup>88</sup> Above, n. 71.

<sup>89</sup> It is worth quoting Hine (1981) 125 on this proem: 'nowhere else is there such a full and clear account of this triple classification as here, but briefer references to it or implicit recognition of it are common in Greek writers, so Seneca is handling ideas familiar in Greek science'.

<sup>90</sup> For Aristotle see e.g. Bonitz (1870) 95, introduction to the lemma Ἀριστοτέλης, and the examples cited Friderici (1911) 29–31; cf. below, n. 423 and text thereto. For the practice of Herodotus, Polybius, Diodorus Siculus, and Dionysius of Halicarnassus see the useful short account of Irigoien (1997) 126–130, for Herodotus de Jong (2002) 259–260; for Philo Mechanicus, Diodorus Siculus, Dionysius of Halicarnassus, and especially Vitruvius Schröder (1999) 106–109, for Philodemus Delattre (1996) 146 and Obbink (1996) 88–95, and for announcements in Lucretius Schrijvers (1976) at (1999) 127 n. 29. The earliest explicit backward glance including brief summary plus announcement, neatly partitioning the poem, is Parmenides fr. B8.50–51 DK, 'at this point I put a stop for you to my convincing discourse and thought about truth; from here learn human beliefs ...', ἐν τῷ—ἀπὸ τοῦδε.

the *Conica* of Apollonius of Perga (*floruit* second half third cent. BCE) lists the contents of the whole work, and several of the individual books of this treatise also begin with listing their contents. Such examples can be multiplied. It would therefore be most surprising if such articulations had been lacking in A, or his anterior tradition. A *Vetusta Placita* without such demarcations is as difficult to imagine as an Aëtian text without (most of) them: the passages eliminated by Diels, supposing he was right in getting rid of them, must have had predecessors serving the same purpose.<sup>91</sup>

From this structural point of view too the (for the most part) fully integrated and indispensable chapter headings in A should be seen as intra-textual markers, pinpointing the sequential progress of the *physikos logos*. Precedents as to formulation and function can be found for quite a few of them.<sup>92</sup> Headings will be discussed separately, in Section 17 below.

In the next Section we shall go back to the beginning of the *Placita*, dealing with authorial observations as they occur in the course of A's exposition. Markers relating to microstructure, for the most part to be discussed separately in Sections 15 and 16 below, will now be referred to only in passing.

<sup>91</sup> Friderici (1911) 44–45, Mansfeld (1998a) 36–40.

<sup>92</sup> For examples of precedents see below, n. 417 and text thereto. Diels (1881) 357–358 speaks of the 'zusammenhangslosen Abschnitte der ursprünglichen Placita', and argues that the chapters interpolated by A at the beginning of Book I were intended to create an 'inhaltliche und stilistische Verknüpfung'. For his view of the original position of ch. 1.3 see above, n. 40.

## 5. *Further Authorial Comments Relating to Macrostructure*

*Summary.* In this section we look at the various authorial remarks and announcements that our author places throughout the five books in more detail. The distinctions between the treatment of the main parts of the cosmos and of the particular issues and that between celestial and atmospheric phenomena belong with the macrostructure. The distinction between corporeal and incorporeal entities is less general, and mainly pertains to the psychology at 4.2–3. This restriction echoes an Aristotelian emphasis. As to macrostructure we further note that the cosmogonical and cosmological chapters 1.4–5 are preliminary, that 1.3 on the principles (or elements), together with 1.6–10 on God(s), matter and idea, are acceptable to Middle Platonists as well as, in various ways, to Stoics and Peripatetics, and that the rather more theoretical than strictly physical chapters 1.11–29 have been interpolated in accordance with the Stoic *physikos logos* into what looks like an originally Peripatetic cosmological sequence.

At the end of the long and de facto mono-lemmatic chapter of A at P 1.4.4, heading ‘How the cosmos was generated’, the author says ‘the chief *parts of the cosmos* were generated in the way described’ (τὰ μὲν οὖν κυριώτατα μέρη τοῦ κόσμου τὸν τρόπον τοῦτον ἐγεννήθη). Diels failed to begin a new paragraph with this phrase although he attributed it to A, while the contents of this long chapter according to him were derived from an Epicurean source.<sup>93</sup> He missed the connection with the short authorial comment in the proem of Book IV, after the cosmology and meteorology have been dealt with in Books II and III: ‘The *parts of the cosmos* having now been treated systematically, I shall continue in the direction of the particular phenomena’ (περιωδευμένων δὲ τῶν τοῦ κόσμου μερῶν διαβήσομαι πρὸς τὰ κατὰ μέρος). The ‘main parts of the cosmos’, according to the account at 1.4 (for the moment we ignore the Atomist aspects of this cosmogony), are earth, heaven, fire, air, and water, all of which come to be in their proper locations. In the course of the exposition of the treatise itself, as we have seen, the sequence is fire, air, earth, and water. The ‘parts of the cosmos’

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<sup>93</sup> DG 58.



mentioned in the proem of Book IV presumably include both these main parts and the more detailed accounts of cosmos, stars, sun, moon, meteorological phenomena, earth, and sea etc. in the books in between. This recalls a programmatic phrase concerned with methodology in the first chapter of Book III of Aristotle's *On the Heavens*, 3.1.298a27–29, 'I call substances the simple bodies, such as fire and earth and those coordinate with these, and what is composed of them: the world as a whole and its parts'.<sup>94</sup> We may add that in A at P 5.19.2, a lemma strangely ascribing the tenet that the cosmos is ungenerated to some (?) Epicureans (presumably wrong name-label), the 'animals' (ζῷα) are said to be 'parts of the cosmos' (μέρη ... τοῦ κόσμου).

A brief tri-lemmatic chapter 'On daemons and heroes' follows the two substantial chapters 1.6–7 on the concept and nature of the gods, in our eyes quite unspectacularly. Yet in A at P 1.8.1 this chapter is announced with an authorial remark: 'Lying next to the account of the gods the account of daemons and heroes should (also) be told' (παρὰκειμένως δὲ τῷ περὶ θεῶν λόγῳ τὸν περὶ δαιμόνων καὶ ἡρώων ἱστορητέον). Note that *logos* here de facto stands for 'chapter'. The next two chapters are 1.9, 'On matter', and 1.10, 'On idea'. Together the topics of chs. 1.6–7 plus 1.9 plus 1.10 form the well-known Middle Platonist triad of principles: God, Matter, and Idea.<sup>95</sup> Chapters 1.6–7, 'From where did men derive their concept of gods?' and 'Who is the God?' (with 1.8 as a sort of appendix) have been placed where they are because theology is a part of Stoic physical theory, and God moreover is the first of the

<sup>94</sup> For Aristotle cf. below, n. 108 and text thereto, n. 134, quotation in text after n. 343; also cf. Ocellus 3.1, and e.g. D.L. 7.141. Living beings as parts of the cosmos Plato *Plt.* 271d; animals and plants as parts of the 'whole' AD fr. 38 Diels (~ *SVF* 1.497); 'our natures as parts of the whole' D.L. 7.81 (~ *SVF* 3.4), cf. M.Ant. 10.6.2.

<sup>95</sup> Noted by Lachenaud (1993) 89 n. 9; Mau *ad loc.* says 'doctrina neoplatonica'. Tarrant (2000) 75–76 discusses 'occasional hints of Middle Platonist doctrines not otherwise known before the first century AD', among which God Matter Idea as the 'basic principles of the Platonic universe according to the Aëtian tradition'. Cf. also below, text to nn. 141, 209. But Varro already knew the three Platonist principles: *Antiq.Rer.Div.* fr. 206 Cardauns *ap.* August. *C.D.* 7.28 ~ Dörrie-Baltes (1996) 118, Baust. 113.1, on the mysteries of Samothrace: 'one of their images represents the sky, another the earth, another the models of things Plato calls Ideas; he [*scil.*, Varro] wants to understand Jupiter as the sky, Juno as the earth, Minerva as the 'Ideas'; the sky being that by whom anything comes to be, the earth being that from which it comes to be, the 'ideas' being that according to which it comes to be' (*in simulacris aliud significare caelum, aliud terram, aliud exempla rerum quas Plato appellat ideas: caelum Iovem, terram Iunonem, ideas Minervam vult intellegi; caelum a quo [ὑφ' οὗ] fiat aliquid, terram de qua [ἐξ οὗ] fiat, exemplum secundum [καθ' ὃ] quod fiat.*); cf. Mansfeld (2002c) 29–30. We know Varro used a predecessor of A, see above, text to n. 62 for the numerous parallels to A Book V.

pair of Stoic principles, God and Matter. As to their designation the two Stoic principles coincide with two of the three Platonist principles. We recognize that terms such as syncretism are out of fashion. One can nevertheless put it as follows: a Platonist's first glance at these chapters would suggest to him he would be entering familiar ground; but it would be no different for a Stoic's first glance.<sup>96</sup> We may perhaps allow ourselves to speak of crypto-syncretism. A Peripatetic however would feel less at home.

The little chapter 'On demons and heroes' somewhat interrupts this significant sequence. The for us perhaps superfluous authorial comment is a shade apologetic; it is possible that ch. 1.8 was inserted when (a version of) the other chapters was already in place, and this was believed to need an explanation.<sup>97</sup> The reason for the inclusion of this material will be the increasing importance of the role of lower divinities in philosophical theology especially from the first century BCE.<sup>98</sup>

We have not left Book I entirely behind us yet, for the proem of Book II at P 2.*Praef.*\* both looks back at the contents of Book I and forward to those of Book II, and perhaps even to those of the rest of the work: 'Having thus finished the account of the principles and elements and of what belongs to the same set as these, I shall turn to the account about the products, starting with the most comprehensive of all things' (τετελεκώς τοίνυν τὸν περὶ ἀρχῶν καὶ στοιχείων καὶ τῶν συνεδρευόντων αὐτοῖς λόγον τρέψομαι πρὸς τὸν ἐπὶ τῶν ἀποτελεσμάτων, ἀπὸ τοῦ περιεκτικωτάτου πάντων ἐνοτησάμενος).<sup>99</sup>

Thus, the contents of Book I are (a) the principles and elements and (b) the συνεδρεύοντα, 'what belongs to the same company as', 'is

<sup>96</sup> For the latter below, Section 8.

<sup>97</sup> Cf. Lachenaud (1993) 225 n. 4.

<sup>98</sup> Some material in Lachenaud (1993) 225–226 nn. 4–7. Our doxographical inquiry is not the place to discuss this theme. We may note, however, that the word δαίμων is equivalent with θεός at P 1.7.1 (quotations of Euripides/Critias fr. B25 DK and esp. Callimachus fr. 586 Pfeiffer) and in the Parmenidean lemmata A at T 6.13 and A at S 1.22.1a, which echo Parmenides' own language (cf. fr. B13.3). On the other hand 'demons below the moon' are found in the Xenocrates lemma A at S 1.1.29b next to other kinds of divine beings, while in the Thales lemma at S 1.1.29b for A 1.7.2 demons are mentioned next to a supreme divine mind, see below, text to n. 373. In the Neopythagorean theology attributed to Pythagoras (see Burkert (1972) 57–58), A at P 1.7.5 ~ S 1.1.29b, the Monad is θεός and good, the Dyad δαίμων and evil.

<sup>99</sup> For the transitions and themes at A at P 2.*Praef.*, at P 3.*Praef.*, at P 3.8.2, and at P 4.*Praef.* see also Part II, Spec. Rec. *Praef.*

attendant upon' or 'subordinated to',<sup>100</sup> so a sort of quasi-principles and quasi-elements. These συνεδρεύοντα are the topics of the conceptual chapters 1.11 to 1.29. Chapters 1.6–10, we have noticed, on God or the gods, Matter, and Idea(s) may be included under an implicit general heading 'principles'. Principles, elements, quasi-principles, and quasi-elements relate as causes to the ἀποτελέσματα, 'effects', 'products', investigated in the sequel; in fact, these products occupy the greater part of the *physikos logos*, viz. all of Books II–V. We should, however, observe that the God, or gods, hardly play a causal role in what follows.

We note at this point an important difference between Book I and the following books up to at least 4.11 (leaving for the moment 4.12–5.30 out of consideration). In the books dealing with cosmology, meteorology, terrestrial phenomena, and psychology, objects of inquiry, e.g. the sun, or the earth, or the soul, tend to be investigated in sets of chapters which for the most part begin with sequences corresponding to Aristotelian categories: substance (οὐσία), quality, quantity, place, disposition, doing and being-affected—though not always all of them, and not always in the same order.<sup>101</sup> This noteworthy arrangement of chapters is not a feature of Book I. The fact that in Book I chapter 21, 'On time', is followed by 1.22, 'On the οὐσία of time', that ch. 25, 'On necessity', is followed by 1.26, 'On the οὐσία of necessity', and that ch. 27, 'On fate', is followed by 1.28, 'On the οὐσία of fate', has to be explained in a different way.<sup>102</sup>

The first of the ἀποτελέσματα, 'products', mentioned, to be treated after Book I is 'what most contains all', viz. the outer heaven, subsequently the main subject of the first chapter of Book II, 'On the cosmos'. In the proem of Book II the earlier chs. 1.4–5, on the generation of the cosmos and on whether the cosmos is one or more than one and whether the All is infinite, seem to be discounted although, as has already been pointed out above (following Diels), these two chapters in

<sup>100</sup> Cf. D.H. *Comp.* 5; for ἀποτελέσματα see Part II, Spec. Rec., *Praef.*, sect. 4.

<sup>101</sup> Mansfeld (1990a) 3205, (1992a) 92–93. Cf. above, Section 1, below, text to n. 107, text to n. 237, and Section 14.

<sup>102</sup> Cf. the passages from ps.Plu. *Fat.* cited Lachenaud (1993) 236 n. 5, to which add *Fat.* 568C–E, 574C. Diels *DG* 176 is impressed by the remarkable erudition of A 1.27–28 ('singulari quadam eruditione splendent capitula de fato'), and hypothesizes as their particular source a Stoic tract *On Fate*. Note that the heading of A 1.22, 'On the substance of time', is in both P and S, while P's chapter headings 'On the substance of necessity' (1.26) and 'On the substance of fate' (1.28) are lacking in S. A 1.21–22 are discussed by Mejer (2006) 25–26.

fact relate to the subject-matter of Book II. There is moreover as we have seen a certain amount of overlap between chs 1.5 and 2.1\*. Chs. 1.4 and 1.5 deal with *preliminary* issues that have to be placed on the agenda before one can begin to deal with the parts of the cosmos one by one. For such issues in Aristotle's *On the Heavens* see below, Section 11. Cleomedes in the *Meteora* proceeds in a similar way, beginning his account by arguing that the (single) cosmos is finite, and that there is a void outside it *pace* Aristotle and those of his Sect, 1.1.1–175 Todd. Similarly Pliny the Elder: the first topics to be mentioned in the table of contents for his Book II are 'whether the cosmos is infinite, whether it is one', *an finitus sit mundus, an sit unus*; in the first chapter of this second book, where these topics are treated, he also refers to the question of what is beyond the cosmos, stating categorically (!) that 'what is outside it does not concern man to investigate', *huius extera indigare nec interest hominum*.

Book III too has a proem: 'Having briefly traversed in the previous (chapters) the account concerning what is in the heavens, of which the moon is the border region, I shall in the third (book)<sup>103</sup> turn to the things on high [i.e. meteorological phenomena]. These are what is from the circle of the moon to where the earth is situated, which they are convinced occupies the position of the centre in relation to the circumference of the sphere. I shall begin from here' [the chapter on the Milky Way follows].<sup>104</sup> 'They', i.e. the philosophers etc., 'are convinced' that the earth is situated at the centre: A here omits to mention the exception, viz. the doctrine of Philolaus described in A at P 3.11.3 or implicitly attributed to Hicetas in A at P 3.9.2. This neat distinction between the treatment in succession of heavenly bodies on the one hand and of meteorological themes on the other

<sup>103</sup> ἐν τῷ τρίτῳ—so also Books I and II were of course numbered. References to numbers of books of quoted works with a title S 1.18.1c (omitted in the parallel P 1.18.5) and S 1.5.15 (P 1.28.3 only cites the title of the second of these treatises). Internal references with book-numbers are apparently first recorded in Apollonius of Perga, *Conica* 2.49, 'what has been proved in the 31st proposition of the first and the 3rd of the present book' (τὰ δεδειγμένα ἐν τῷ λά τοῦ πρώτου καὶ ἐν τῷ τρίτῳ τούτου τοῦ βιβλίου), and Archimedes, *De Sphaera* 105.7–8, τοῦτο γὰρ δέδεικται ἐν τῷ πρώτῳ βιβλίῳ, cf. *ibid.* 106.26, 110.13, 120.21. On numbered mathematical propositions see below, n. 419. On systems of book numbering see Burnyeat (2004a), referring to Goldstein (1968) 269–271.

<sup>104</sup> A at P 3.*Praef.*, περιωδευκώς ἐν τοῖς προτέροις ἐν ἐπιτομῇ τὸν περὶ τῶν οὐρανίων λόγον, σελήνῃ δ' αὐτῶν τὸ μεθόριον, τρέψομαι ἐν τῷ τρίτῳ πρὸς τὰ μετάρσια· ταῦτα δ' ἐστὶ τὰ ἀπὸ τοῦ κύκλου τῆς σελήνης καθήκοντα μέχρι τὴν θέσιν τῆς γῆς, ἥτινα κέντρον τάξιν ἐπέχειν τῇ περιουχίῃ τῆς σφαίρας νενομίσασιν. ἄρξομαι δ' ἐντεῦθεν.

can be paralleled from the proem of Aristotle's *Meteorology*, I.1.338a20–339a10.

Thus, the books of the treatise are numbered, not provided with titles; themes are announced in separate paragraphs. This seems to be according to custom. Artemidorus of Daldus tells us that he gave a title to what now is the third book of the *Onirocritica*, because he had composed it 'not as a continuation of the two (books), but as something unconnected. Therefore, and appropriately, it will have as inscription not the third of these, but one for itself: "Truth-lover, or Seen on the Way"'.<sup>105</sup> So the first two books have no titles of their own, while the third, being separate, has one: 'Truth-lover, or Seen on the Way'. That some of the books of Seneca's *Naturales Quaestiones* have their own titles (V, *De ventis*; VI, *De terrae motu*; VII, *De cometis*) may perhaps be explained by thinking of them as blow-ups, in a manner of speaking, of *Placita* chapters, or as monographs that have been combined to form a treatise in several books.

The intermediate proem in A Book III (at P 3.5.1) on the distinction between reality and appearance of meteorological phenomena (a distinction corresponding, roughly, to that between Arist. *Mete.* I.1–3.1 and 3.2–6) has been discussed above, in Section 4.

The subject following after the meteorology is announced in A at P 3.8.2: 'The meteorological phenomena having been described by me, also those relating to the earth will be treated systematically' (περιγεγραμμένων δέ μοι τῶν μεταρσίων, ἐφοδευθήσεται καὶ τὰ πρόσγεια). In the list of themes to be treated in the proem of the *Meteorology*, I.1.338b22–339a4, the 'parts and species and affections/attributes of earth' are mentioned between the Milky Way and comets and shooting stars and meteors on the one hand, and the causes of winds and earthquakes and thunderbolts and whirlwinds and firewinds on the other. We may note in passing that the order of themes in the proem does not correspond to that of their presentation in the body of Aristotle's work, and that some themes treated subsequently are not listed at the beginning.<sup>106</sup>

<sup>105</sup> Artemidorus 3.28, p. 316.7–10 Pack, οὐχ ὡς συνημμένον τοῖς δυοῖν ἀλλ' ὡς ἀπολελυμένον ἐποίησα. ὅθεν καὶ τῆς ἐπιγραφῆς εἰκότως τεύξεται οὐχὶ τρίτον ἔχεινων ἀλλὰ κατ' ἰδίαν Φιλάληθες ἢ Ἐνόδιον. Cf. *ibid.* 4.pr., 237.9–14 Pack. We have found no references to Artemidorus in the literature on titles we have seen.

<sup>106</sup> See the footnotes in the Loeb ed. The sea (*Mete.* 2.1–3) and most of the subjects of Book III (the rainbow, halo, and mock sun 3.2–6) are not listed in Aristotle's proem, which should not be seen as a table of contents. Also cf. above, n. 67 and text thereto, text to n. 83.

Treatment of these *prosgēia* in A includes that of the substance, number (i.e. the issue whether there is one earth or two), position, shape, and immobility of the earth, thus following the sequence of categories.<sup>107</sup> In Section 9 below we shall see that this positioning of issues according to the *descensus*, after the meteorological phenomena—although before that of the moist element which according to a strict order of descent through the elemental cosmic layers should have come before—, is not the only possible one for a (doxographical) account of nature and the universe. The general belief that the earth occupies the central position referred to in the proem to A Book III (cited above) does not entail that this topic has to be discussed subsequently to the meteorology, as in A.

We may go on with the proem of A Book IV at P 4.*Praef.*, although this, too, has already been cited: ‘The parts of the cosmos having now been treated systematically, I shall continue in the direction of the particular phenomena’ (περιωδευμένων δὲ τῶν τοῦ κόσμου μερῶν διαβήσομαι πρὸς τὰ κατὰ μέρος). The ‘*particular phenomena*’ (τὰ κατὰ μέρος),<sup>108</sup> subsequently treated in Books IV and V, are the Nile, the human soul, the senses, etc., up to old age. The chapter on the Nile (4.1) belongs with these later books and not (as Diels believed)<sup>109</sup> with the hypothetical fourth book of the *Vetusta Placita* corresponding to A 3.9–17 plus 4.1. The Nile, an *individual* river with its own name, belongs with τὰ κατὰ μέρος.

Another authorial comment pertaining to structure, though of smaller scope, is found at the beginning of the first lemma of ch. 4.3, heading (P only) ‘Whether the soul is a body and what is its substance’. Looking back at the previous chapter, A at P 4.3.1 says ‘all those previously listed in order submit that the soul is incorporeal’ (οὔτοι πάντες οἱ προτεταγμένοι ἀσώματον τὴν ψυχὴν ὑποτίθενται), and then lists some of the attributes of soul from the lemmata of the previous chapter. S has left out this first lemma. In the next lemma, A at P 4.3.2, we learn that ‘those from (ἀπ’) Anaxagoras said it is air-like and a body’ (ἀεροειδὴ ἔλεγον τε καὶ σῶμα). In the parallel lemma at S 1.49.1b the words ‘and a body’ have been omitted, which is consistent with S’ leaving out the first lemma. As compensation S here preserves the name-labels

<sup>107</sup> As noted above at n. 101.

<sup>108</sup> For the formula cf. e.g. Thphr. *CP* 2.3.5, D.L. 7.60, Philo *Leg.All.* 1.22–24, below, text to n. 237, after n. 342.

<sup>109</sup> *DG* 182, 226–227.

Anaximenes Archelaus Diogenes, abridged away by P. That the soul is corporeal also holds for the other lemmata of this chapter, though the tenet of ‘Xenarchus the Peripatetic and some others’ in A at S 1.49.1b amounts to a compromise between corporealism and incorporealism. The diaeresis, or diaphonia, between corporeals and incorporeals can be used as a criterion of demarcation between sets of views. In A this particular opposition is rare.

Aristotle only attributes an important role to the opposition between incorporeal and corporeal principles in the second chapter of the *On the Soul*. The corporeality or incorporeality of elements and principles is an important factor in the discussion of the motive and cognitive functions and capabilities of the soul. It is therefore noteworthy that A has faithfully preserved the explicit distinction between corporeal and incorporeal at a location, viz. chs. 4.2–3 on the soul, which in this respect faithfully follows Aristotle’s account in the *On the Soul*,<sup>110</sup> while it is not mentioned at ch. 1.3 ‘On the principles’,<sup>111</sup> a chapter much of which ultimately goes back to the second chapter of the first book of Aristotle’s *Physics* and the expository chapters (3–6) of the first book of the *Metaphysics*, and to the introduction of Theophrastus’ *Physics*, where criticism is incidental (e.g. when the random statements of the earlier thinkers are compared with Anaxagoras’ introduction of *Noûs*, *Met.* A 3.984b15–20). In the expository chapters *Met.* A 3–6 Aristotle does not avail himself of the contrast between corporeal and incorporeal. He uses this diaeresis in combination with that according to number only

<sup>110</sup> Cf. above, text to n. 8, n. 18 and text thereto; below, text to n. 294. In Cicero’s accounts of various views concerning the soul (*Luc.* 123, *Tusc.* 1.18–22) the division incorporeal–corporeal is not an explicit item, though the tenet of Xenocrates is both times characterized as incorporealist: *Luc.* 123, ‘a number wholly without a body’ (*numerus nullo corpore*), *Tusc.* 1.20, he ‘denies it has any quasi-body’ (*quasi corpus negat esse ullum*). Nevertheless the two groups of tenets presented at *Tusc.* 1.18–22 are parallel to those at A 4.2–3, though Cicero begins with corporealist views. Seneca is explicit at *Ep.* 88.34, ‘there are countless issues concerning the soul alone: [...] whether it is a body or not’ (*innumerabiles quaestiones sunt de animo tantum: [...] utrum corpus sit an non sit*); less so at *Nat. Quaest.* 7.25.1, where we read ‘another (will call the soul) an incorporeal force’ (*alius incorporealem potentiam*). On these passages see Mansfeld (1990a) 3126–3131 (Cicero), 3137–3140 (Seneca). In Cicero, the word *incorporealis* does not occur.

<sup>111</sup> The diaeresis between corporeal and incorporeal was later applied to this topic too; see e.g. the doxographical account and division of the *archai* (or elements) according to substance and quantity at Sext. *M.* 9.359–364 (parallels for division according to substance and quantity *P.* 3.30–32 and *M.* 10.310–318). It is not a feature of the brief overview of Cic. *Luc.* 118. For the division of the elements/principles in Galen see below, n. 340.

in the summary of these chapters in A 7.988a23–32. He says there that all those discussed in the previous chapters are speaking of the material cause, for it does not matter whether they say the principle and cause is one or more than one, or whether they say it is incorporeal or corporeal. By referring to both corporealists and incorporealists Aristotle indeed includes everyone concerned, and that all without exception use the material cause is the point of his argument. The examples of material principles provided are Plato's Great-and-Small and the Infinite of the Italians (cf. A 6.987b25–26) as dualist and monist incorporeals, Empedocles' quartet of the elements and Anaxagoras' infinite mass of homoeomeries as pluralist corporeals, and the views of anonymous though for the most part identifiable monist corporealists. Those who only posit elements of bodies are mistaken, for there are also incorporeals.<sup>112</sup> At the beginning of the next chapter, A 8.988b22–26, he repeats the latter point in somewhat different words by saying that the monists who posit a corporeal and extended principle are mistaken, 'because they only assume elements of corporeal things, and not of incorporeal ones, which also exist'.

A's dependence in 4.2–3 on the *On the Soul* is parallel to that relating to the presentation of the opposition between reality and appearance (or reflection) in the meteorological section of Book III, which as we have seen in this respect mirrors the exposition and order of treatment of the *Meteorology*.

It is becoming clear to what extent the tradition represented by A is conservative or even reactionary, for all the efforts devoted over many years to updating both exposition and contents.

There are only a few minor further instances of an explicit opposition between corporeal and incorporeal in A. At P 1.11.2–3 (~ S 1.13.1a and 1b) the incorporeal first causes of Pythagoras and Aristotle are opposed to the corporeal causes of the Stoics. A single chapter which as to its main (and only) diaphonia is parallel to chs. 4.2 and 4.3 combined

<sup>112</sup> See Berti & Rossitto (1993) 109–110, who also point out that in *Met.* A 9–10 first the corporealists are treated, and then the incorporealists (the Pythagoreans and Plato), but note that Aristotle characterizes the latter as those who posit and deal with 'both sensible and non-sensible objects', *Met.* A 8.989b24–27. The word ἀσώματος occurs only three times in the *Metaphysics*, viz. in two chapters of Book A: 7. 988a25–28, 8.988b25–26. Aristotle's indebtedness to Plato's discussion at *Soph.* 264a–269d cannot be discussed here, but we may note that Plato achieves a compromise between corporealists and incorporealist, the former having to concede that some incorporeals are real and the latter that some corporeals are.



is ch. 4.20, with the heading ‘Whether voice is incorporeal’ (thus both P and S; P adds ‘and how echo comes to be’). Its two lemmata are extant in P only and oppose Pythagoras Plato Aristotle, who hold it is incorporeal (as it is the shape and surface in relation to the air, and surface is incorporeal),<sup>113</sup> to the Stoics, who hold it is corporeal. Another to some extent parallel single chapter is 5.4, ‘Whether the semen is corporeal’; here only three lemmata are extant (P only): according to Leucippus and Zeno it is a body, while Pythagoras Plato Aristotle (again this trio) hold the power of semen to be incorporeal, but the ejaculated matter to be corporeal. Compare A at P 1.11.3 (Pythagoras Aristotle) ~ S 1.13.1b (Pythagoras),<sup>114</sup> where the authorities hold the first causes to be incorporeal, and believe that the other causes participate in the corporeal substance. Strato and Democritus (note the unchronological order of the name-labels) hold this power to be a body. The compromise position is here placed in between the opposed views, as is often the case in A.

Our overall conclusion must be that A’s backward glances and announcements are to the point. That no notes concerned with structure are extant after 4.3.1 may be due not only to epitomization but also to the transmission. The last chapters of Book V in particular have been damaged.<sup>115</sup>

<sup>113</sup> Cf. definition of shape at P 1.14.1 ~ S 1.15.3b, and A 4.8 at S 1.50.11, ‘those from the ancients’ (οἱ ἀπὸ τῶν ἀρχαίων), hold the perceptions to be of the incorporeal *logoi* about the bodies, and therefore call them shapes.

<sup>114</sup> S omits ‘Aristotle’ in this lemma because at 1.13.1b he inserts a fragment from AD for Aristotle, printed by Diels in the right column as his fourth lemma of A 1.11, see Vol. 1:250–251.

<sup>115</sup> See Runia (1999b) 245–246.

## 6. *The Introduction of the Treatise*

*Summary.* We now focus on the introductory section of the treatise, 1.*prae*f. together with the first three chapters of Book I. We argue that if the chapter headings are mentally eliminated, this section amounts to the kind of introduction typical of treatises dealing with a specific discipline. The subject is defined in 1.1, and a short history provided in 1.3, including a reference to its first practitioner and a relative chronology. The discipline at issue here is the physical part of philosophy, which just as its ethical part is a problem-oriented venture. To define physics we have to define *physis*, the author says in 1.1. The definition given is Aristotelian, with the somewhat surprising proviso that what comes to be through chance, or necessity, or is divine, is excluded. It is certainly true that the account provided in the treatise is not determinist, as well as being remarkably secular. Ch. 1.2, on the difference between principle and element, prefaces the account of the principles, or elements, given in 1.3.

The division of the introductory section of A Book I into the proem of the whole work at P 1.*Praef.* and the first chapter of the first book at P 1.1 (with a heading: ‘What is *physis*?’) obscures the fact that what we have here is a part of a standard introduction of a work, or manual, dealing with a particular scientific or scholarly discipline, a Περί τέχνης. We believe that this introduction also includes A at P 1.2, with the heading ‘In what respect do principle and element differ?’, as well as the explicit points about the Successions distributed over A 1.3, viz. A at P 1.3.1 (paralleled, as we shall see, at S 1.10.12), A at P 1.3.6 (paralleled even according to Diels at S 1.10.12), A at P 1.3.7, and A at P 1.3.7a Mau (= P 1.3.7 *ad fin.*, A 1.3.9 Diels), all under the chapter heading ‘On principles, what they are’. The description of the principles in A 1.3 can also be regarded as belonging with this introductory material, since principles are what everything else is based upon.

The chapter headings of A 1.1, 1.2, and 1.3, already more than usually unhelpful as a description of contents, constitute an epistemological obstacle preventing one to see the cento consisting of the proem plus 1.1–2 plus parts (at least) of 1.3 as a continuous whole.

A work Περί τέχνης more often than not begins with a definition of the subject and its parts including their designations, an account of its origins, a short history of the (parts of) the discipline listing inven-

tors and other illustrious workers in the field, differences between individuals and schools, and/or various views concerned with its nature and importance.<sup>116</sup> For philosophy one may refer to the second part of the proem of Diogenes Laërtius, 1.13–21, where all these topics are to be found, and (from a much later period) to the *Introductions to Philosophy* written by the Neoplatonists David and Elias. The introductory section of the *Philosophical Inquiry* compiled by the confessedly unoriginal G is also relevant. Here we find the tripartition of philosophy and description of the parts (ch. 1; also ch. 6, with heading: ‘How many parts there are of philosophy’, πόσα μέρη τῆς φιλοσοφίας), a paragraph on the definition of philosophy (ch. 4, with heading ‘How they defined philosophy’, πῶς τὴν φιλοσοφίαν ὥρισαν), a detailed, unfortunately much disturbed account of the Successions with Thales as the first philosopher according to the majority and including brief bits on the Italian and Eleatic lines (ch. 3, no heading), a paragraph on the Sects (ch. 7, with heading περὶ αἰρέσεων), and one on the beginnings/causes of philosophy (ch. 8, also with a heading: τίς ἀρχὴ φιλοσοφίας).<sup>117</sup>

An equally suggestive parallel from a related discipline is the proem to Celsus’ *De Medicina*. This treatise is earlier than A’s work, Celsus being a contemporary of Tiberius, A at the earliest a contemporary of Titus. Celsus moreover will have been familiar with arrangements found in Greek treatises now lost. In Celsus we first have a brief descriptive definition of the subject (§1, ‘medicine promises health to the sick’, *sanitatem aegris medicinam promittit*), followed by a potted history of medicine (§§1–12). Hippocrates is said to have been the first (*primus ex omnibus memoria dignus*) to have really practised medicine, having separated the discipline from philosophy (§8). The three parts of medicine are mentioned and described (§9), important names and relative dates are provided, and the concept of Succession is used explic-

<sup>116</sup> See Fuhrmann (1960) *passim*; Mansfeld (1986a) 306–307, also for some further examples. One may also consider Strabo’s long introduction from this angle.

<sup>117</sup> Well summarized at Diels *DG* 242. Mutschmann (1911) 97–98 remarks that the logical section of G and a number of chapters in Sextus Empiricus’ *Pyrhronist Hypotyposes*, which according to Diels *DG* 246–252 go back to a common source, do share a number of chapter headings. Note that in Sextus these are sometimes adapted to his particular subject, i.e. Skepticism not philosophy in general. The headings that are of interest in our present context are *Pyrh. Hyp.* 1.3, ‘On the designations of Skepticism’, 1.6, ‘On the beginnings/principles of Skepticism’, and 1.8, ‘Does the Skeptic have a Sect?’

itly (§ 11, *ex cuius successoribus*). Then the important medical schools are described and their main doctrines set off against each other at some length (§§ 13–74).<sup>118</sup>

Most of these ingredients can indeed be paralleled from the introductory section of A, viz. the proem plus 1.1–2 plus parts of 1.3. The subject of the treatise, physics, is mentioned in its first sentence. What is more, this sentence, the conciseness of which it would be difficult to improve upon, immediately identifies physics as a part of philosophy by stating that in order to establish what physics is we need to set out the division of philosophy, to establish the number of its parts, and to identify which of these parts is physics.<sup>119</sup> We cite A at P 1.*Praef.*:

Our purpose being to hand down the physical theory, we believe it to be necessary to start right away with the division of the discipline of philosophy, that we may know what philosophy is, and as which of the number of its parts we may count the exposition of physics.<sup>120</sup>

We have indicated the reference to the (precise) number of the parts by the formula ‘establish the number’, since there is no exact English equivalent for *πόστος* (in German one could translate ‘der wievielste Teil’), which entails that there is a specific number of parts.<sup>121</sup>

In the two Dielsian lemmata that follow, A at P 1.*Praef.* 2–3, a diaeresis of two views concerned with the division and definition of philosophy and physics is presented, first the well-known view of ‘the Stoics’ at P 1.*Praef.* 2,<sup>122</sup> who posit tripartition, and then that of ‘Aristotle and Theophrastus and almost all the Peripatetics’, positing bipartition. It seems to be implied that on this issue there are no dissidents among

<sup>118</sup> Cf. Fuhrmann (1960) 86–87.

<sup>119</sup> See Fuhrmann (1960) 149 on the ‘scholastische Gepräge’ visible already at the beginning of A: division of philosophy, definitions of ethics, physics, difference between principles and elements.

<sup>120</sup> μέλλοντες τὸν φυσικὸν παραδώσειν λόγον ἀναγκαῖον ἡγούμεθα εὐθὺς ἐν ἀρχαῖς διελέσθαι τὴν τῆς φιλοσοφίας πραγματείαν, ἵν’ εἰδῶμεν τί ἐστι καὶ πόστος μέρος αὐτῆς ἡ φυσικὴ διέξοδος. For παραδίδοναι cf. Lachenaud (1993) 191 n. 1, LSJ *v.* a1 and 4, e.g. Plato *Phdr.* 268b4, Arist. *An.* 1.2.405b29–30 (and Bonitz 562a60–b4), Thphr. *Sens.* 2, ‘opinions handed down to us with regard to sense perception’ (περὶ αἰσθήσεως αὐταὶ παραδέδονται δόξαι), and the first sentence of the proem of Sen. *Nat.* Book III (i.e. the beginning of the whole work), on the decision to ‘pass the causes and secrets of the cosmos on to be known to others’, *aliis noscenda prodere*, although this includes just making something known. On A’s proem cf. Mansfeld (1992) 84–85.

<sup>121</sup> Cf. e.g. S.E. *M.* 7.1–20 on different views concerning the number of these parts (one, two, three); more examples at Mansfeld (1990a) 3157–3161.

<sup>122</sup> Printed *SVF* 1.35.

the Stoics, though in other sources we are informed about people like Zeno's pupil Ariston, who limited philosophy to ethics.<sup>123</sup>

In order to define *philo-sophia*, the Stoics first defined *sophia*, wisdom, as the 'knowledge (ἐπιστήμη) of things divine and things human', and next philosophy as the 'practising of the required art'<sup>124</sup> (τέχνη—we may add that this discipline aims at the achievement of such knowledge). 'What is required first and foremost is virtue, and the most general virtues are three: physical ethical logical.'<sup>125</sup> For this reason philosophy too is tripartite, of which one part is physical, another ethical, another logical'. This is then illustrated by examples; 'physical, when we inquire (ζητῶμεν) about the cosmos and what is in the cosmos,<sup>126</sup> ethical what studies the life of man, logical being about *logos*—what they also call dialectical'.

No explicit definition of philosophy is given for Aristotle and his followers. What the term means for the Peripatetics, viz. the striving for perfection in cognition and conduct, is to be derived from their division:

The perfect human being should both theorize about the things that are and perform the acts that have to be done (καὶ θεωρητικὸν εἶναι τῶν ὄντων καὶ πρακτικὸν τῶν δεόντων). This can also be seen from the following (examples): the problem is (ζητεῖται) whether or not the sun is a living being [...].<sup>127</sup> When one inquires (ζητῶν) into this matter one

<sup>123</sup> *SVF* 1.351–357.

<sup>124</sup> Cf. *SVF* 2.35, 2.1017, 2.36, Sen. *Ep.* 89.4–8.

<sup>125</sup> Cf. D.L. 7.92, part of sentence not in *SVF*: 'others' say there are not two but three main virtues, 'logic and physics and ethics' (ἄλλοι δὲ λογικὴν καὶ φυσικὴν καὶ ἠθικὴν). Compare Philo *Ebr.* 91–92 on the varieties of the 'power residing in the wise man', ἐν τῷ σοφῷ δύναμις.

<sup>126</sup> περὶ κόσμου, the example provided, quite apt in the context of physical *Placita* (esp. Books II–V) is listed D.L. 7.132 as the first sub-*topos* of the division according to species of the Stoic *physikos logos*, see further Section 8 below. In the proem, D.L. 1.18, where the tripartition of philosophy into physics, ethics, and dialectic is cited, physics is described as the part that is 'about the cosmos and the things in it' (τὸ περὶ κόσμου καὶ τῶν ἐν αὐτῷ); similar phrases e.g. Philo *Leg.All.* 3.84, *Aet.* 4. The definition of cosmos as the 'compound of heaven and earth and the natures in them' (σύστημα ἐξ οὐρανοῦ καὶ γῆς καὶ τῶν ἐν τούτοις φύσεων) is attributed to Chrysippus (*SVF* 2.527 ~ AD fr. 31 Diels) as well as Posidonius (fr. 14 E.-K. *ap.* D.L. 7.138), and used by Philo, *Aet.* 4 and [Arist.] *Mu.* 2.391.9–10. Περί κόσμου, the title of a well-known pseudo-Aristotelian treatise, is also cited as the title of works by Sphaerus, Chrysippus, Antipater, and Posidonius. As an alternative for Περί φύσεως it is found at Stobaeus 1.21.7a ~ Philololaus fr. B2 DK, Plu. *Tranq.* 472D.

<sup>127</sup> Not an explicit issue in A, but perhaps implied at 2.20.4\* see Part II, ch. 20, sect. 16. We omit a *locus nondum sanatus*, †εἴπερ ὁρᾶται†, and retract the suggestions proposed by Mansfeld (1992a) 85 n. 89 and Vol. 1:158 in favour of εἰ[περ] (τηλικούτος ἡλικος)

theorizes, for what is theorized about (θεωρεῖται) is not more than what *is* (τὸ ὄν) [viz., does not include conduct]. In the same way it is a problem (ζητεῖται) whether the cosmos is infinite [one of the issues at 2.1\*], and whether there is anything outside the cosmos [the issue of 2.9\* and one of the issues at 1.18], for all these (problems) are theoretical. On the other hand it is also a problem (ζητεῖται) how one should live, and how one should take care of one's children, and how one should command, and how legislate, for all these questions are formulated (ζητεῖται) with a view to conduct, and one who does this is someone acting.

We note that there is no logic, or dialectic, in the division of the Peripatetics, as there was in that of the Stoics, and no reference to Aristotle's third group of disciplines, viz. the productive arts.<sup>128</sup> However the explicit examples of problems to some extent represent logical, or dialectical, method. There can in our view be no doubt that this chapter is not a trivial piece added by a bungling A. For the methodology for which Stoics as well Peripatetics are cited, viz. that of formulating problems (*zêtêseis, quaestiones*) is *exactly the methodology* used throughout most of the *Placita*. Diels, who said of the examples of problems provided here that they 'generate tedium', 'taedium parant',<sup>129</sup> missed this key ingredient rather badly.

Accordingly, although the division of philosophy of the Stoics differs from that of the Peripatetics, both schools are agreed that physics is a philosophical discipline with a definite scope and a definite *problem-oriented* method. That both Stoics and Peripatetics also provide solutions is not mentioned.

This noteworthy consensus of authorities is not rejected or criticized, and so allows the doxographer to proceed as announced. His approach to physics can be and will be aporematic.

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ὁρᾶται, see Q's version 'ob die Sonne grösser ist als das Ausmaass, in dem er sie sieht' (Q omits 'whether or not the sun is a living being'). This issue is shared by Epicurus and the Stoics, see Ep. *Ad Pyth. ap.* D.L. 10.91, τὸ δὲ μέγεθος ἡλίου [...] τηλικούτον ἐστὶν ἡλίκον φαίνεται, the Epicurus lemma on the size of the sun A 2.21.5\*, τηλικούτον ἡλίκος φαίνεται, and the Stoic *zêtêsis* D.L. 7.132 εἰ ὁ ἡλῖός ἐστι τηλικούτος ἡλίκος φαίνεται. Cf. below, n. 223. [περ] in εἰ[περ] looks like a *Verschlimmbesserung*.

<sup>128</sup> Tripartition of physical, ethical and logical propositions at *Top.* 1.14, see below, Section 14; the well known different division of theoretical, practical, and productive disciplines e.g. at *Met.* E 1.1025b25–26, 2.1026b5. At *Top.* 6.6.145a15–18 and 8.1.157a10–11 Brunschwig deletes the words καὶ πρακτική, καὶ πρακτική τινος, and αἱ δὲ πρακτικαί, see his notes (2007) 233–234 n. 2 and 269 n. 3 (but at 7.1.152b4 he still reads ἀλλὰ τοῦ μὲν ὅτι θεωρητικὴ ἐπιστήμη, τοῦ δ' ὅτι πρακτική).

<sup>129</sup> *DG* 101. See further below, Section 8 on Stoic *zêtêseis*, text to nn. 222–225, and Section 14 *ad fin.*, on Aristotelian *zêtêseis*.

The first sentence of the next chapter further defines the main theme: 'Because it is our intention to theorize about the things of nature, I believe it is necessary to explain what in fact nature is' (ἐπειδὴ πρόκειται ἡμῖν τὰ φυσικὰ θεωρῆσαι, ἀναγκαῖον ἡγοῦμαι δηλῶσαι, τί ποτ' ἐστὶν ἡ φύσις). Note the term θεωρῆσαι, which provides a further link with what comes before: study of nature, not conduct. The formula τὰ φυσικὰ of course may just mean 'physics', but in view of the explanation that follows we prefer 'the things of nature'. Compare, in the second lemma, 'all things seen are called natural' (πάντα γὰρ τὰ ὁρώμενα [...] φυσικὰ λέγεται), viz. the objects and events studied by the physicist. The chapter heading τί ἐστὶν φύσις echoes the words τί ποτ' ἐστὶν ἡ φύσις a little further down in the first lemma, and may derive from it.<sup>130</sup>

The definition of *physis* is given 'according to Aristotle' as 'principle of movement and rest for that in which it is in a primary way and not accidentally', a virtually verbatim quotation of a descriptive definition in the first chapter of Book II of the *Physics*.<sup>131</sup> Again, this is clarified by means of examples:<sup>132</sup>

All things visible, apart from what comes about by necessity or by accident or is divine or has such a [sc. necessary, or accidental, or divine] cause, are called physical and have a particular nature (ἰδία φύσις), such as earth, fire, water, air, plants, animals. Further the following that occur: rains, hails, lightnings, hurricanes, winds, for these have a beginning, for each of these is not from eternity but comes about from a beginning. These phenomena, just as animals, plants, have a beginning of their coming to be. For these, then, *physis* is in the first place the beginning of movement, and not only of movement but also of rest. For what had a beginning of movement can also achieve an end. For that reason *physis* is the beginning of movement and rest.

These elements, plants, animals, and meteorological phenomena are treated in the main body of the treatise, in respectively Books I, V, and III, so the proem provides a preliminary impression of its contents.<sup>133</sup>

<sup>130</sup> Other instances of (parts of) chapter headings closely related to first sentences of chapters: 1.2, 1.4, 1.7, 2.3\*, second part of heading of 2.20\* in P.

<sup>131</sup> Arist. *Phys.* 2.1.192b21, noted Diels *DG* 217.

<sup>132</sup> A at P 1.1. The formula ἰδία φύσις does not pertain to individuals but to species, or natural kinds, cf. *PA* 2.10.657a11–12, 'in other animals as well these sense-organs are very satisfactorily organized as required by the particular nature of each kind' (καλῶς δὲ καὶ τοῖς ἄλλοις ἔχει ταῦτα τὰ αἰσθητήρια ζῴοις πρὸς τὴν ἰδίαν φύσιν ἐκάστω), 4.5.682a18–19, 'of all those creatures the cicadae have the most particular nature' (τὸ δὲ τῶν τεττίγων γένος ἰδίαν ἔχει μάλιστα τούτων φύσιν).

<sup>133</sup> For the meteorology noted by Lachenaud (1993) 195 n. 9.

The examples also echo the enumeration of (examples of) the things which exist by nature, viz., ‘living beings and their parts, and plants, and simple bodies: e.g. earth and fire and air and water’, given in the same chapter of the *Physics* (192b8–11).<sup>134</sup> Aristotle in this chapter also explicitly speaks of *physis* representing *coming to be* (γένεσις), viz. as the path toward the final state, or form (193b12–21). The Stoic definitions of *physis* are very different,<sup>135</sup> but the fact that in some formulations the technical fire is said to proceed methodically towards creation (e.g. *ad gignendum* Cic. *N.D.* 2.47) may have been believed to produce a measure of purported consensus. This technical fire is identified with the Stoic God in A at P 1.7.8 ~ S 1.1.29b, ‘proceeding methodically towards the coming to be of the cosmos’, ἐπὶ γένεσιν κόσμου.

The contents of the final chapter of Book I, A at P 1.30, with the chapter heading ‘On nature’, Περί φύσεως, now fall into place. There are two lemmata. Empedocles is said to have held there is no φύσις of anything, but only a blending and separation of elements (in support Empedocles fr. B8 DK is quoted verbatim). Anaxagoras is said to have shared this view, speaking of combination and separating off in the sense of coming to be and passing away. So here coming to be and passing away are explicitly mentioned in the context of a treatment of φύσις, clearly in the sense of coming into being, γένεσις.

It has been argued that ch. 1.30 (not in S) originally belongs with 1.1.<sup>136</sup> That G ch. 20 summarizes 1.30 before 1.1 (see Diels *DG ad loc.*) does not prove or confirm this but enhances the likelihood. The chapter may have been removed from its original position as a consequence of the process of epitomization by P, and as an afterthought have been placed at the end of the scroll, or at least of Book I, as there still was room for it there. It seems to be a better idea, however, to assume that whoever is responsible for this separation and outplacement acted with a purpose; this makes A a more likely candidate than P, though we cannot be certain. Book I in its present shape both begins and ends with φύσις. The ring composition produced by the return to *physis* just before the treatment of the cosmos in Book II begins, and after the substantial interlude, viz. the series of chapters dealing with theologi-

<sup>134</sup> Similar list at *Cael.* 3.1.298a28–b1, cf. above, text to n. 94.

<sup>135</sup> *SVF* 1.171–172, 2.1132–1134 (2.1132 ~ D.L. 7.148 differs from the others); further parallels quoted by Pease *ad* Cic. *N.D.* 2.47.

<sup>136</sup> Thus already Diels *DG* 57, followed by Lachenaud (1993) 22. Diels posits that the tenets of Empedocles and Anaxagoras are added as a *mantissa*, attributing the dislocation to the author’s inability, cf. above, n. 28.



ical matters and the abstract concepts to be treated along with the principles and elements, is quite appropriate. Chapter 1.30 moreover produces a diaphonic opposition to 1.1 spanning virtually the whole of Book I: Aristotle's view entails that *physis* in the sense of coming to be and passing away is real, while its reality is denied by Empedocles and Anaxagoras, who provide a different explanation of what according to them only looks like coming to be and passing away. So there are two views of nature, one including bringing into existence and passing away, the other replacing this by the mixture and separation of ungenerated ingredients. Accordingly the diaphonic microstructure typical of numerous chapters of the *Placita* also provides the key to the opposition between these two chapters at the beginning and the end of a book, thus creating for its contents a macro-environment which is quite effective, though it takes some effort to discover.<sup>137</sup> Ch. 1.30, moreover, appears to have preserved a more bland and presumably original chapter heading: 'On nature',<sup>138</sup> whereas, as we noticed, the heading of 1.1, 'What is nature?' is perhaps derived from the chapter's first sentence.

A peculiarity of ch. 1.1 remains to be discussed. The exclusion from (Aristotelian!) physics of what comes to be through chance, or through necessity, or is divine, from a general point of view does not sit well with Aristotle's discussion of chance and necessity at *Phys.* 2.4–5 and 2.9, or with his (admittedly somewhat problematic) treatment of the unmoved mover at *Phys.* Book VIII.<sup>139</sup> At a first glance it also fails to square with the subsequent inclusion of things divine at A 1.6–7, or with that of chance at A 1.29. To be sure, A 1.25–26, 'On necessity' and 'On the substance of necessity', well documented in both main sources, do not have lemmata for Aristotle, so in this respect seem to be consistent with the exclusion of this concept from Aristotelian physics in 1.1. Epitomization by P may of course be responsible for the absence, in P 1.1, of a position opposed to that ascribed to Aristotle, viz. one that would explicitly include treatment of chance and necessity and things divine in physics. Still the chapter 'Who is the God?' at P 1.7.7 ~ S 1.1.29b22 does have an Aëtian lemma with the name-label Aristotle, typically referring

<sup>137</sup> See Mansfeld (2002a) 289–290, who also quotes the suggestion by David Runia that it was first omitted and then added at the end of the scroll, and discusses the Aristotelian antecedents of the quotations of Empedocles and Anaxagoras.

<sup>138</sup> For the formula cf. e.g. [Hipp.], *Morb.Sacr.* 20, Plato, *Lys.* 214b. Earliest instance of its use as a title in Aristotle, mostly referring to the *Physics*, e.g. *Met.* 983b1, 985a12, 986b30, 1086a24. See further Schmalzriedt (1970).

<sup>139</sup> Not understood by Lachenaud (1993) 22, 195 n. 8.

to the fifth element. And an uneasy difference remains between the Aristotelian position depicted in A at P 1.1 and the tenets to which his name-label is attached at 1.29. The chapter ‘On chance’ at P 1.29.2–3 ~ S 1.6.17a has two Aristotle lemmata, dealing with chance and the spontaneous according to Aristotle.<sup>140</sup> If S’s version at 1.6.17a, much longer than P at 1.29.2–3, is accepted for A, the concepts of necessity and chance come in by the back door, since in the first of these lemmata four causes are attributed to Aristotle: ‘intellect, nature, necessity, chance’ (νοῦν, φύσιν, ἀνάγκην, τύχην).

The best solution of the puzzle consisting of the conflict both with Aristotle’s original doctrine in its entirety and with lemmata further down in Book I seems to be that what we have at 1.1 is a typical *Placita* lemma, in which a philosophical doctrine has been condensed and modified. It is apparently sufficient that Aristotle’s preliminary account of this concept in *Phys.* 2.1 is followed closely and the existence of *physis* (in the sense of coming into being and ending) taken for granted, although the elimination *disertis verbis* of necessity and chance goes a bit far if one thinks of Aristotle himself. Thus the function the tailored lemma fulfills is simply that of providing an authoritative account of *physis*, indispensable in the general introduction to a *physikos logos*. The elimination of necessity and chance may be seen as an effort to limit the scope to phenomena covered by the Aristotelian concept of ‘for the most part’ that is cited here.

What, presumably and less trivially, is also intimated in ch. 1.1 is that the account of physics that is to follow is not determinist in the Atomist sense (think of the role played by chance, or is it necessity, in the Atomist systems). Nor is it unscientific in the sense that the gods are made responsible for most, or even all, of what occurs. According to the popular belief that for instance considers lightning to be an instrument of punishment in the hands of the deity the gods are responsible. So they are also according to pantheistic philosophical systems such as that of the Stoics, which in the end reduce all events to the decision of the gods, or God. Also note that this narrowing down of (Aristotelian) physics helps to keep another Stoic idea at bay, viz. that the parts of philosophy are strongly interconnected, and that for this reason a solid grounding in physics is indispensable for ethics. We have seen above (Section 2, *ad init.*) that in the prologue Aëtius tells us that the parts of

<sup>140</sup> At S 1.6.17a these are separated by the Plato lemma that comes first in P, and their order is the opposite of that in P as well (cf. above, n. 33, below, n. 480).

philosophy are different from each other, and that problems in physics are not relevant for conduct, for how one should live. Theoretical issues are to be sharply distinguished from practical ones.

God is not only one of the two principles posited by the Stoics, but also one of the three principles that are assumed according to the standard Middle Platonist view.<sup>141</sup> And one of the subparts of the Stoic *physikos logos* is the section ‘on gods’.<sup>142</sup> The exclusion of the divine from physics at 1.1, though on the face of it inconsistent with the treatment of theological subjects at 1.6–8 as an integral part of physics, becomes less severe as soon as we realize that it is excluded from a compressed version of *Aristotelian* physics. And in the theological chapters much room is reserved for the explanation of the origin of the concept of God or gods (1.6), and for the views of atheists (1.7.1).<sup>143</sup> Aristotle distinguished theology from physics, and so did Theophrastus.<sup>144</sup> A for his part does not give God a role in physics. What he does is to inform his readers about discussions and views concerning God and the gods, and our knowledge of them.

The reflection of the Middle Platonist principles in the three chapter headings is more a matter of presentation and representation, i.e. of form, than of content. We should also note the striking absence of theologizing in the chapters on the cosmos and the heavenly bodies in Book II. A’s theological chapter 1.7 is enlightened and restrained. P’s is even more so: of the twenty-three lemmata in the second part of 1.7 found in S 1.1.29b which constitute what we may call positive theology, i.e. various tenets concerned with what God is or the gods are, P has preserved a mere eight, some of which moreover he abridged.

Ch. 1.2, ‘In what respect do principle and elements differ’ (heading of P, τίνι διαφέρει ἀρχὴ καὶ στοιχεῖα), ‘On principles and elements’ (heading of S), is so to speak an introduction within an introduction, viz. a preliminary point to be made before the account of the *archai* that follows. Again we find two views, as in the proem on the division of philosophy, but this time these are not different in some respect while in agreement in another, but contraries, that is to say diaphonically

<sup>141</sup> Above, text to n. 95, below, text to n. 209.

<sup>142</sup> See below, Section 8.

<sup>143</sup> For the doxographical nature of the section on the atheists see Runia (1996a).

<sup>144</sup> The proper study of the divine belongs with first philosophy for Aristotle as well as Theophrastus. See Arist. *Cael.* 1.8.277b10–12, *Phys.* 1.9.192a35–37, *Met.* E 1.1026a19–31 cf. K 7.1064a37–b3, and Theophrastus’ criticism of Xenophanes at fr. 224 FHS&G ~ *Phys.Op.* fr. 5 Diels, and of Plato at fr. 230 FHS&G ~ *Phys.Op.* fr. 9 Diels.

opposed. In A at P 1.2.1 ~ S 1.10.16b Aristotle and Plato (note the order) and their followers are cited for the view that principle (note the singular) and elements do differ, but we are not told what this difference is. In A at P 1.2.1 ~ S 1.10.16b Thales (Thales only, though in the next chapter this point of view is attributed to others as well)<sup>145</sup> is cited for the view that the principle (note the singular again) and the elements are the same. This view is then sharply criticized:<sup>146</sup>

The difference could hardly be greater, for *we say* (φαμέν) that the principles [note the plural] are neither composite nor effects. *We call* (καλοῦμεν) earth water air fire elements, for example, but *we speak* (λέγομεν) of principles on account of the fact that (a principle) does not have something prior to it from which it comes to be, because such a thing [viz. one which has something prior to it] is not a principle, but that from which it comes to be (is a principle). There are entities prior to earth and water from which they have come to be, (viz.) the shapeless and formless matter, and the form *we call* (καλοῦμεν) entelechy, and the privation. So Thales errs (ἀμαρτάνει) in saying that water is both principle and element.

A first person plural of *verba dicendi* intimating a positive stance is rare in the *Placita*.<sup>147</sup> Φαμέν, καλοῦμεν, and λέγομεν at the beginning of this passage in both P and S are standard terminology used among professionals, just as e.g. A at P 1.*Praef.*1, *DG* 273a21, ζητῶμεν. But in the note on ‘entelechy’ and ‘privation’, which has disappeared in S, the author seems to give his own view, or rather what he believes to be the view of a school of thought he perhaps to some extent identifies with here: that of Aristotle. In the long lemma on Pythagoras, A at P 1.3.7 ~ S 1.10.12, the first person plural ‘we think’ (νοοῦμεν) occurs three times, viz. *DG* 282a21,23,29 (A at P only), in a context about Ideas, or forms, and definitions. This context, much indebted to a coalescence

<sup>145</sup> G ch. 21 attributes the lack of distinction to ‘the philosophers from Ionia’, perhaps generalizing from Thales, perhaps anticipating upon the first lemmata of 1.3, a chapter which he does not use further.

<sup>146</sup> For what follows cf. Alt (1973) 135–136, who however fails to point out that Thales is criticized in the previous chapter, A 1.2.

<sup>147</sup> For the first person plural pertaining to ‘us humans’ cf. A at P 1.3.4 ~ S 1.10.12 προσφερόμεθα; at P 1.6.1 (1.6.8 Diels) ἐλάβομεν; at 2.20.12\* προσονομάζομεν; at P 3.5.3 (three times) ~ S 1.30.1, at P 4.14 heading, and at P 4.14.4 ~ S 1.52.16 ὁρῶμεν; at P 3.5.3 ὁρῶμεν ~ S 1.30.1 βλέπομεν; at S 1.50.6 ἀντιλαμβανόμεθα; at P 4.11.1 ἔχομεν, ἐλκόμεθα; at P 4.12.1 ~ S 1.52.16 θεωρῶμεν; at P 4.20.2 ἀκούομεν, αἰσθανόμεθα; at P 5.2.3 βουλόμεθα, βλέπομεν. For authorial remarks to the readership in the first person singular and plural in the introduction and transitional passages see above, Section 4. *init.* In A at P 5.14.3 ἐωράκαμεν is in the Diocles speech, see below, n. 451.

of Platonic and Aristotelian notions, suggests allegiance on A's part to this syncretistic mode of thinking. And in the de facto mono-lemmatic chapter on Stoic cognition, A at P 4.11, a text in *oratio recta* which begins with the words 'The Stoics say', the first person plurals (P only) *DG* 400a14 'we say' (φάμεν) and 400a23, 'we are called' (προσαγορευόμεθα), seem to refer back to the Stoics (but the point marked by φάμεν, viz. that a plurality of similar memories produce an experience, is also valid for Aristotle, see *Met.* A 1.980b28–a1). Diels *DG* 100 not unreasonably speaks of a Peripatetic allegiance of A. Fourteen years later however he suggests that the *Vetusta Placita* derive from the circle of Posidonius.<sup>148</sup> To us it seems that A's purported allegiance may well change from one chapter to another, at least in some cases. A true pedagogue, he may speak of different views with equal empathy or antipathy. A further reason for the presence of these first persons plural may be the conservative streak characteristic of the *Placita*, which may have preserved expressions used by an earlier contributor who really was a Peripatetic, or a Neopythagorean, or a Stoic. These two reasons are not incompatible.

The three Aristotelian technical terms matter, form or entelechy, and privation are perfectly paralleled in the Aristotle lemma of the next chapter, A at P 1.3.12 (the only source to have preserved the term entelechy here) ~ S 1.10.16a, and at T 4.11: the principles are three, viz. matter form privation, as indeed established in the first book of the *Physics*. The description of Aristotelian matter very much resembles one of Stoic matter, but this is how Aristotle's so-called first matter came to be interpreted. The question of the elements according to Aristotle, left open in ch. 1.2, is formulated here too: the elements are four (sc. the usual quartet), and there is also a fifth body. However in the Plato lemma at P 1.3.11 ~ S 1.10.16a ~ T 4.11, which in all three sources precedes the Aristotle lemma, the elements are not mentioned, but the three standard Middle Platonist principles God Matter Idea are cited and defined. Plato's elements must of course be the standard foursome: no fifth body here.

That chs. 1.2 and 1.3 belong together is also obvious from the criticisms leveled at Thales in 1.2, and at Anaximander and Anaximenes in A at P 1.3.2–3 ~ S 1.10.12. The objections are formulated from an Aristotelian, or at least Peripatetic, point of view. This is consis-

<sup>148</sup> Diels (1893) 102 = (1969) 240.

tent with the first person plural ‘we call’ pertaining to the use of the Aristotelian terms matter, form/entelechy, and privation in ch. 1.2, we already have discussed. That Thales and his fellow-Milesians are ‘mistaken’ is each time expressed with the word ἀμαρτάνει,<sup>149</sup> and the points of critique themselves are concerned with deficiencies that are similar to each other. Also note that the criticism leveled at Thales in ch. 1.2 is *not* repeated in the first lemma of ch. 1.3, undoubtedly on purpose. We may further observe that the criticism leveled at Anaximander and Anaximenes, viz. that they only mention the material and omit the efficient cause (τὸ ποιοῦν αἴτιον), for all its Aristotelan and Theophrastean antecedents should be perfectly acceptable to the Stoics with their doctrine of the two principles, passive matter and active God.

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<sup>149</sup> Venerable Aristotelian antecedents of this terminology (cf. Alt (1973) 143) and even of the contents of the critique at e.g. *Cael.* 3.5.304b11–13, *GC* 2.1.329a8–10, *Met.* A 8.988b22–25; see further Bonitz *vv.* ἀμαρτ- and διαμαρτ-. For Theophrastus see e.g. his judgement of Anaxagoras, ‘the first to supply the cause that was lacking’, *Thphr.* fr. 228A FHS&G ~ *Phys.Op.* fr. 4 Diels *ap.* *Simp. in Phys.* 27.2–4, echoing and to some extent correcting *Arist. Met.* A 3.984b15–20. Objections are also extant elsewhere in the *Placita*: against Plato A at P 1.5.3, πρὸς δὴ τὸν Πλάτωνα ἡγτέον, for the formula cf. *Arist. Cael.* 2.13.295a29–30; critique of Anaxagoras and Plato at P 1.7.1 (1.7.5–6 Diels), ‘both have a mistake in common’ (κοινῶς οὖν ἀμαρτάνουσιν ἀμφοτέροισι); against Democritus etc. 4.19.3, ‘one could say against these people’ (ἔχου δ’ ἂν τις πρὸς τούτους εἰπεῖν). See also above, n. 54 and text thereto, and Mansfeld (1992a) 109–111 on ‘Dialectic in Aëtius and Theophrastus’.

## 7. Successions and Sects

*Summary.* References to Successions and Sects occur throughout the treatise. But the main exposition is given in 1.3, with interesting implicit parallels in 1.7. Unfortunately, the lacunae in our three main witnesses for 1.3 (especially in Theodoret) and the disorder in Stobaeus make a reconstruction virtually impossible (Diels' effort is creative, but it is not based on the sources for Aëtius). Stobaeus and ps.Plutarch mention the Ionian Succession from Thales, and the Pythagorean Succession. Theodoret adds the Eleatic Succession from Xenophanes. We are able to distinguish parallel clusters of name-labels in our three sources, viz. Eleatics, early Ionians, and Atomists. Grouping together of tenets is also brought about through the contents of lemmata. We refer to the antecedents of ordering according to Succession in Aristotle and Theophrastus, and to parallel accounts in Philodemus and Cicero. In Book II as reconstructed in Part II of the present Volume the names of venerable archegetes of the Successions, or of their earliest followers, are often found in the first lemmata of chapters. This quasi-historical arrangement presumably also holds for the other less-well preserved books of the treatise.

Another conspicuous feature of A 1.3, 'On principles, what they are', is the part played by the notions of διαδοχή, 'Succession', and αἵρεσις, 'Sect' or 'School' (of thought), familiar from Hellenistic (hi)stories of philosophy.<sup>150</sup> Lemmata explicitly pertaining to Successions in this important chapter are mostly found in P, with a single parallel in S and additional information in T. The number of abstracts with name-labels from A in P is thirteen (counting Epicurus plus Democritus as one), plus two referring to Successions. The number in S is twenty-one (different lemmata for Democritus and Epicurus), plus one referring to Succession. The number in T is thirteen too. As to contents and ordering there is much difference between these sources. At the end of the present Section also evidence about Successions and Sects found elsewhere in the *Placita* will be discussed briefly.

P and S use 'Sect' and 'Succession' interchangeably. In more precise terms, however, there are Successions of individual persons in a Sect,

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<sup>150</sup> Diels *DG* 169–174, 178–181, von Kienle (1961), Alt (1973) 137–148, Mejer (1978) 62–74, Giannatasio Andria (1989), Mansfeld (1999a) 23–25, Mejer (2000) 45–47, Mejer (2006) 30–31.

or ‘philosophy’. See A at P 1.3.6 ~ S 1.10.12 p. 124.12–13 Wachsmuth, first part of sentence: ‘So these men, following upon each other *in a row* through the Successions, fill out the Ionian philosophy’ (οὔτοι μὲν οὖν ἐφεξῆς<sup>151</sup> ἀλλήλοις ταῖς διαδοχαῖς γενόμενοι τὴν Ἰωνικὴν ἐκπληροῦσι φιλοσοφίαν). We should bear in mind that Successions only provide a relative chronology, not an absolute one.

P explicitly mentions the Ionian Succession and Sect beginning with Thales and ending with Archelaus and does so twice (viz. 1.3.1 and 1.3.5–6), and the Italian Succession and Sect beginning with Pythagoras (1.3.7–7a Mau).<sup>152</sup> S 1.10.12, *loc. cit.*, explicitly mentions only the Ionian Succession, beginning with Thales and ending with Archelaus. In T neither the Ionian nor the Italian Succession are mentioned (the whole Ionian section plus the Pythagoras lemma are remarkably absent at T 4.5–12), but at 4.5 he mentions the Eleatic Sect beginning with Xenophanes, which is not mentioned by either P or S. This Succession in T explicitly includes Parmenides and Melissus.

P 1.3.1 begins by stating that the ‘Ionian Sect was assigned this name [P has προσηγορεύθη, S at 1.10.12 p. 124.14–15 W. οὕτω προσαγορευθεῖσαν, see below] because it derives from Thales of Miletus, as there were numerous philosophical Successions’ (ἐγένοντο γὰρ πλείοται διαδοχαὶ φιλοσοφίας).<sup>152a</sup> This is shorthand for e.g. the following thought: there were numerous philosophical Successions, so to distinguish them they were given different names, as the Ionian Sect got its name from Thales of Miletus. (One should point out, however, that the Ionian Sect is not called after its founder, but after its founder’s native region.) S does not mention the Ionian Succession at the beginning, in the Thales lemma, but further down, after the lemma on Archelaus, where P refers to it for the second time; so S has coalesced the information found in two Aëtian lemmata. S formulates the derivation of the name a bit more suitably, for he says p. 124.15–16 W. that Miletus was the capital (*sic*) of Ionia. Virtually the same convoluted explanation of the designation

<sup>151</sup> Cf. below, text to nn. 159, 191.

<sup>152</sup> In the mss. of P and the translation of Q the lemma on the Italian Succession comes at the end of the chapter. It was moved forward to after the Pythagoras lemma by Beck, followed by Diels, Mau, and Lachenaud. We have given it the number 7a, and following Mau for the sake of convenience include it at the end of P 1.3.7. See below, text to n. 163. There is an insufficient brief note on Successions and Sects in Lachenaud (1993) 198–199 n. 2.

<sup>152a</sup> A different translation, turning the plural πλείοται διαδοχαὶ into a singular and serving as the motto of his study, is found at Graham (2006) 1: ‘It [sc. the Ionian school] became the longest tradition in philosophy’.



‘Ionian philosophy’ is found in Diogenes Laërtius (1.13), who also tells us that philosophers derived their appellations from, *inter alia*, names of cities, or of teachers (1.17, paralleled in other sources).<sup>153</sup> The verb προσ-αγορεύειν, ‘to give a name’, is more or less technical; it is used a number of times in A to indicate that this is what something has been called by someone for the first time, or by someone in particular, or is called generally.<sup>154</sup> We have already encountered it above when Pythagoras coined the name ‘philosophy’ for the discipline. Consistently, it also occurs in connection with the Italian Succession at P 1.3.7a Mau = A 1.3.9 Diels, ‘the Succession of these men was given the name Italian’ (Ἰταλικὴ προσηγορεύθη), cf. Hippolytus, *Ref.* 1.2.1, ‘the philosophy they called (προσηγόρευσαν) Italian’.

Thales moreover is mentioned at P 1.3.1 as being considered<sup>155</sup> as the first philosopher (ἄρξαι τῆς φιλοσοφίας), and Pythagoras, the other ‘beginning’ (ἅπ’ ἄλλης ἀρχῆς), as the ‘first to have called “philosophy” by this word’ (P 1.3.7 ~ S 1.10.12 p. 124.19–20, πρῶτος φιλοσοφίαν τούτῳ τῷ ῥήματι προσαγορεύσας).<sup>156</sup> In Section 6 above we have seen that in Celsus Hippocrates is the first genuine physician. In the proem of Diogenes Laërtius claims that philosophy has an Oriental origin are rejected, for it began with Musaeus in Athens and Linus in Thebes (D.L. 1.3–4, so here too we have two beginnings, though earlier ones; the claim for Orpheus is put into doubt 1.5). But in reality philosophy has ‘two’ other ‘beginnings’ (δύο ... ἀρχαί), viz. one from Anaximander and one from Pythagoras (ἀπὸ Πυθαγόρου), D.L. 1.13. What matters, however, is not what name is mentioned in this context, but that *a* name, or names, are supplied *for* such a context in a work dealing with a particular discipline.

<sup>153</sup> E.g. Clem.Al. *Strom.* 1.62.1. ‘three Successions named after the regions where they lived’ (τρεῖς γηγόνاسι διαδοχαὶ ἐπώνυμοι τῶν τόπων περὶ οὓς διέτριψαν), and Elias (David) in *Cat.* 108.18–19, ‘after the native land of the founder of the sect’ (ἀπὸ τῆς πατρίδος τοῦ αἰρεσιάρχου).

<sup>154</sup> See A at S 1.1.29b p. 36.8 and 36.16 W., terminology of Xenocrates; at 2.12.1\*, astronomical terminology attributed to Thales Pythagoras; at S 1.26.4, Aristotelian terminology; at S 1.50.6, Stoic terminology; P at 4.13.5 ~ S 1.52.13, term introduced by Hestiaeus. Already for a Platonic term at Arist. *Met.* A 6.987b7–8, M 4.1078b31–32, Thphr. fr. 230 FHS&G ~ *Phys.Op.* fr. 9 Diels *ap. Simp. in Phys.* 26.11–12, for an Empedoclean expression Thphr. *Sens.* 9, see Baltussen (2006) 10. The verb occurs quite often in e.g. Plato and Aristotle, just signifying ‘to call’, but sometimes with a more specific meaning.

<sup>155</sup> For P’s δοκεῖ at 1.3.1 cf. on Thales’ primacy Theophrastus *ap. Simp. in Phys.* 23.29–31 ~ Thphr. fr. 225 FHS&G ~ *Phys.Op.* fr. 1 Diels.

<sup>156</sup> Cf. above, n. 154 and text thereto.

Diels' reconstruction from P, S, and T of A's sequence of lemmata in ch. 1.3 is not so good. Although in all three sources similar clusters of names can be found which may even occupy comparable positions in a sequential arrangement, there are major differences. Diels stated that he had been unable to reconstruct A's order because of the disagreement among the sources. With his usual panache he added that the reader should use his, Diels' order, as the correct one, because it agrees with the majority of Successions found in the biographical literature, e.g. in Clement of Alexandria, and Epiphanius.<sup>157</sup> But what Diels in fact has accomplished (and got away with)<sup>158</sup> is a rather drastic reordering of the lemmata as found in the three main sources. We cannot now attempt to offer a better reconstruction of the whole chapter 'On principles', among other things because its various versions in the three main sources should be studied in connection with numerous doxographical-dialectical parallel accounts of the principles from, say, Isocrates to the *Appendix Serviana*. It is moreover not possible to give a structural analysis in terms of a diaeretic scale of diverging or mutually resembling tenets for this chapter on the basis of what is in T, S, and P, as Diels no doubt must have seen as well. But what we can do is to list the particular clusters of name-labels that occupy the same, or about the same, sequential arrangement in the three main sources. We submit that agreement between three or two sources as to order points at the original sequence in A.

*First*, five successive name-labels in two sources, viz. in S (though interrupted by two other name-labels, of philosophers) and in P (though interrupted by one other name-label, of a poet), are absent in T: Thales—Anaximander—Anaximenes—Anaxagoras—Archelaus, plus the explicit note found in both S and P that this set constitutes the Ionian Succession. See A at P 1.3.6 ~ S 1.10.12 p. 124.13–14 W., first part of sentence: 'So these men, following upon each other *in a row* through the Successions, fill out the Ionian philosophy', οὗτοι μὲν οὖν ἐφεξῆς<sup>159</sup> ἀλλήλοις ταῖς διαδοχαῖς γενόμενοι τὴν Ἰωνικὴν ἐκπληροῦσι φιλοσοφίαν. At P 1.3.2–5 we have four name-labels after Thales beginning with the

<sup>157</sup> *DG* 178–179, 'Aëtii verum ordinem ex testium discordia non semper certo elicere potui. sed in universum nostro pro vero uti licebit, quoniam congruus est plerorumque biographorum successionibus. similem certe ordinem sequitur Clemens ..., similiorem Epiphanius'.

<sup>158</sup> Accepted by von Kienle (1961) 19, who says the reconstruction is 'ohne Tadel' but not certain. Similarly Alt (1973) 138, 145–153.

<sup>159</sup> Cf. above, text to n. 150, below, text to n. 191.

letter A (in alphabetical order). Up to this point Diels' reconstruction of the first part of ch. 1.3 is acceptable, though we may hesitate to give a separate lemma to the note on Homer including a quotation of *Il.* 14.302 found at P 1.3.1 (1.3.2 Diels in the *DG*), which interrupts the series of Ionians. S only has the Homeric line, and not here at 1.10.12 in his series of abstracts from A, but at the beginning of this chapter, 1.10.2, among the poetic quotations; so he presumably omitted it here. The fact that the series of name-labels is said *disertis verbis* to constitute the *Ionian Succession from Thales* (thus P; S says Thales started it) implies that the reference to Homer and the quotation of the line about Ocean as the origin of all things is not a proper lemma with a tenet but an embellishment of the Thales lemma. But in a *Placita* context quite a lot goes: the poetic reference may have been inserted in the Ionian Succession because the Stoic Zeno made a similar appeal to another poet to support *his* claim that in the beginning things came from water; the snag is that on this point only a reference to Hesiod is attested for Zeno, though we hear he also wrote about, or rather cited Homer.<sup>160</sup> So we may see this additional remark as a Stoicizing lemma updating something like Aristotle's note *Met.* A 3.983b27–33 about Thales and the ancient theologians, where a similar Homeric tag is referred to, *Il.* 14.201 on father Ocean and mother Têthus.

S's Ionian sequence is disturbed as well, for two lemmata both beginning with the letter Ξ and absent in P have been copied out at S 1.10.12 p. 123.7–10 W. between Anaximander and Anaximenes, viz. Xenocrates and Xenophanes.<sup>161</sup> These two interpolated name-labels are in fully alphabetized (and so unchronological) order, but the attributed doctrines are not connected or opposed in a significant way, and there is no link in respect of school, or Succession. When taken *au pied de la lettre* S's account infiltrates Xenocrates and Xenophanes into Ionian territory, for S's explicit note on the Ionian Succession follows after his Archelaus lemma. This move is unheard of, at least for Xenophanes. The best, though entirely hypothetical, explanation we can come up with is that S decided to put Xenophanes close to Anaximander because Xenophanes is a very early figure and (as is presumably attested for A in T) the founder of a Sect, or Succession, of his own, viz. the Eleatic Succession. Having looked for a lemma starting with Ξevo S (or his amanuensis) first copied out the wrong lemma, then,

<sup>160</sup> Below, n. 432 and text thereto.

<sup>161</sup> Cf. Vol. 1:212.

realizing the mistake, copied out the right lemma, and forgot or simply did not bother to delete the other one. Where in A's original chapter the lemmata for Xenocrates and Xenophanes should be located is not clear, but that they originally do not belong in the Ionian environment where they are now found in S is also clear. Diels separated them from each other and put them somewhere else, viz. Xenocrates close to the end and Xenophanes near the middle of the chapter. Evidence in T, as we shall see, is indeed in favour of placing Xenocrates near the end of the list and Xenophanes closer to its beginning, although where exactly we should place Xenophanes (and his successors) remains an open question.

The *second* cluster of name-labels found in the same relative position in two of the sources is Pythagoras—Heraclitus-cum-Hippasus, viz. in P 1.3.7 ~ S 1.10.12 (Pythagoras) and P 1.3.8 ~ S 1.10.14 (Heraclitus-cum-Hippasus). In P these immediately follow upon each other, in S they are merely separated from each other by the Theano passage inserted at S 1.10.13. In T Pythagoras is lacking, and the twinned name-label Heraclitus-cum-Hippasus is the penultimate item of T's series of thirteen abstracts from A at 4.11. There are moreover several difficulties: in S 1.10.12 p. 124.17–18 W. 'Philolaus the Pythagorean' and Strato, in this order, come before Pythagoras, while after Pythagoras and so before Heraclitus-cum-Hippasus S at 1.10.13, as we just saw, inserts an abstract from Theano, a source extraneous to A, though merely as a clarification of the Pythagoras lemma which he abridged considerably. Neither Philolaus nor Strato is found in either P or T. Even so, the sequence (Archelaus—) Pythagoras—Heraclitus-cum-Hippasus, as in P, seems reasonably secure. The position of Philolaus and Strato before Pythagoras in S is consistent with S's omission of the first words of the Pythagoras lemma, on the 'other beginning' of philosophy. The seminal role of Pythagoras is paralleled in related reports.<sup>162</sup> In the context of a Succession Strato should be somewhere else entirely, and Philolaus somewhere after Pythagoras, but because, as we saw, these two name-labels are only in S there is no evidence in the other sources that could be of further help in providing them with a place.

Diels inserted Philolaus after the archegete Pythagoras at P 1.3.7 and after the inserted note on the Italian Succession at P 1.3.7a ~ A 1.3.9 Diels. The text of this note is as follows: 'The Sect of these men (ἡ

<sup>162</sup> Cf. e.g. D.L. 1.13, 8.1, and Hipp. *Ref.* 1.2.1.

δὲ τούτων αἰρεσις) was called Italian because Pythagoras taught in Italy; for he went there from his native Samos because he disliked the tyranny of Polycrates' (cf. e.g. Hipp. *Ref.* 1.2.1). The note was removed from its position at the end of the chapter in the mss of P by the editors of P.<sup>163</sup> We are not certain that this transposition is sound. It is quite plausible that P put it at the end of the chapter because he was at a loss where to insert it, having deleted both Philolaus and Ecphantus. In its original position in the mss. of P the note pertains retrospectively to the whole series from Pythagoras to Zeno. But in the new position allotted by the editors it may apply equally well (or rather equally inappropriately) to the same whole series. For Diels the note seems to announce (his restored order) Philolaus—Heraclitus-cum-Hippasus—Empedocles. But in the predecessors of this lemma in Aristotle and Theophrastus the order is the reverse: first Hippasus, then Heraclitus. The swapping of the latter two names in the *Placita* lemma may well have been a consequence of alphabetization.<sup>164</sup>

More important than the position of this lemma in the chapter are the *chronographic* contents, viz. the *synchronism* of Pythagoras and Polycrates, the only one to be found in the *Placita*. It goes back to Apollodorus' *Chronika*.<sup>165</sup> Apollodorus is to be dated to the second half of the second century BCE. So this simple sentence with its innocuously familiar contents surprises us by providing a *terminus post quem* somewhere around, say, 125 BCE for this lemma, and so presumably for the information explicitly concerned with the Successions in A 1.3. At P 1.3.1 Diels *inter alia* bracketed the phrase about Thales' philosophical activity in Egypt and his arrival in Miletus as an older man, ascribing this to P not A, but he failed or forgot to bracket the Apollodorean synchronism for Pythagoras as an interpolation at P 1.3.7a Mau = 1.3.9 Diels. The mini-biographies of Thales and Pythagoras in the chapter are *vitae parallelae*, as each career comprises two parts spent in different places: Egypt and then Miletus ('the capital of Ionia' according to

<sup>163</sup> See above, n. 152.

<sup>164</sup> Diels *DG* 178 (cf. 152) argues that Heraclitus in A belongs with the Italian Succession, just as in Hippolytus. But the Hippasus-cum-Heraclitus lemma in A, which as to the first part of its contents ultimately derives from Arist. *Met.* A 3.984a7–8 and Thphr. fr. 225 FHS&G *ap. Simp. in Phys.* 23.33–24.3 ~ *Phys.Op.* fr. 1 Diels (as Diels, *DG* 179, 220–221 admits) is very different from Hippolytus on Heraclitus. See Diels *DG* 145–146, criticized and revised Mansfeld (1992b) 12, 43, 50–52, 231–242. On the conjunction of Hippasus with Heraclitus see Diels, *DG* 475.

<sup>165</sup> See D.L. 2.2 ~ Apollodorus *FGrHist* 244 F 29 plus F 339, with Jacoby's comments on this text *FGrHist II Komm.* 726–727, 803–804, and Mosshammer (1979) 278.

S) for Thales, Samos and then Italy for Pythagoras. Both are founders of schools, and both times the names of these schools derive from the regions where the protagonists spent the second part of their lives. Such symmetry is hardly accidental.

In A 1.3 Xenophanes of Colophon is extant only at T 4.5 as the founder of the Eleatic Sect (and T 4.7 has Parmenides of Elea as his pupil). We know from elsewhere, viz. from a most remarkable autobiographic verbatim fragment, Xenophanes B8 DK, that he left his native city at twenty-five and had been making a living in Greece for another seven-and-sixty years. In another verbatim fragment, B22 DK, the Homeric question ‘who and from where among men are you?’ is combined with the question ‘how old are you, and what was your age when the Mede arrived?’ (synchronism). It has always been attractive to combine these two fragments, but the first already gives us sufficient information.

No explicit reference to this periodization of Xenophanes’ life as in fr. B8 DK is found in T and thus in A, but we can hardly fail to observe that it is just as much divided into parts as Thales’ and Pythagoras’ lives are said to be by A. At any rate, the association of the Colophonian from the East with Elea in the West mentioned by T (and of course not by T alone) attests to the symmetry of his career with that of the other archegetes of the philosophical Successions mentioned by A in 1.3, even to the extent that his school derived its name to a later place of residence: Elea. A brain drain from East to West, viz. from Egypt to Miletus, from Samos to Italy, and from Colophon to Elea.

The *third* cluster of successive name-labels is found in all three sources: Democritus—Epicurus—Ecphantus. P 1.3.9 combines Epicurus and Democritus in one lemma, while T 4.9 has Metrodorus between Democritus and Epicurus, clearly in order of Succession. In S 1.10.14 Metrodorus—Diogenes—Zeno—Leucippus are found between Heraclitus-cum-Hippasus and Democritus. In S Epicurus is separated from Ecphantus at 1.10.16a by an abstract from the *Corpus Hermeticum* at 1.10.15. Leucippus before Democritus as in S makes sense from the point of view of Succession, but Metrodorus’ position in S does not, and Diogenes and Zeno are out of place from the point of view both of content and of Succession. If we leave Leucippus where he is in S and Metrodorus where he is in T we get an acceptable series of Atomists: Leucippus—Democritus—Epicurus—Metrodorus—Ecphantus. But the positions of Diogenes—Zeno (as in S) remain problematic.

A *fourth* cluster is Plato—Aristotle—Zeno, in two sources: P 1.3.11–13 and T 4.11–12. To be sure, in P the name-label Socrates is added to Plato, and in T the name-label Xenocrates is found between Aristotle and Zeno. The presence of Socrates will be further discussed below;<sup>166</sup> from the point of view of Succession the position of this name-label before Plato is as it should be, and we should not forget the famous precedent at Arist. *Met.* A 6.987b1–6. The position of Xenocrates before Zeno is not odd either, for according to a tradition reported by Diogenes Laërtius Zeno ‘heard’ Xenocrates.<sup>167</sup> Thus, we get (Socrates)—Plato—Aristotle—Xenocrates—Zeno.

An alternative fourth cluster, in two sources, S 1.10.16a and T 4.11, makes the third cluster a bit longer: (—Ecphantus)—Plato—Aristotle. But S’s sequence Ecphantus (the Pythagorean Atomist)—Plato fails to make sense both as Succession and as to contents. Instead of Ecphantus P 1.3.10 has Empedocles, also impossible to link with Plato on the basis of what is in the lemmata, or on the basis of Succession. In S alone we not only have Ecphantus before Plato at 1.10.16a, but also, after Aristotle and as the last to be mentioned, Diodorus Cronus, a sort of Atomist as well. As to doctrine, or Succession, Diodorus Cronus has nothing to do with Aristotle and Plato either. We may note that (for the sake of elegant variety?) there are Atomists here on either side of Plato and Aristotle, but otherwise these arrangements remain incomprehensible.

T’s version of a large part of A 1.3 at 4.5–12 starts with Xenophanes and reads ‘Xenophanes son of Orthomenes, of Colophon, the founding father of the Eleatic Sect ...’ (Ξενοφάνης μὲν οὖν ὁ Ὀρθομένους ὁ Κολοφώνιος, ὁ τῆς Ἑλεατικῆς αἰρέσεως ἡγησάμενος κτλ.) He then goes on with Parmenides, ‘the follower of Xenophanes’, Ξενοφάνους ἑταῖρος, who followed his ‘teacher’ (διδασκάλος), in important respects—Melissus, the ‘follower of Parmenides’ (τούτου μὲν ἑταῖρος)—Democritus—Metrodorus—Epicurus, *floruit* in the fifth generation after Democritus’ (πέμπτη γενεᾷ μετὰ Δημόκριτον γεγονώς)—and Ecphantus, ‘who also followed these men’ (τούτοις δὲ καὶ Ἐκφαντος ... ἡκολούθησε). This is a quite generous version of the Eleatic Succession,

<sup>166</sup> Text to n. 408.

<sup>167</sup> Zeno is said to have not only followed the lectures of Crates, but also those of Xenocrates (for ten years) and Stilpo, D.L. 7.2. What is at issue here is not so much historical truth as personification of doctrinal resemblances. At A at S 1.1.129b Xenocrates is said to have inspired Stoic theology; see below, this Section.

which has been upgraded to some extent as to explicit organization and become Atomist with (Leucippus and) Democritus, so that Ecphantus the Pythagorean Atomist, more on whom below, not inappropriately comes last. Summarizing T as a whole, we see that he omits the Ionians and first has an Eleatic Succession of three, then leaves out the Pythagoras lemma and several others, and then copies out a sequence from Democritus to Zeno. His sequence of three Eleatics plus four Atomists conforms to standard versions of the Eleatic Succession. We may conclude that he put the two lemmata Heraclitus-cum-Hippasus and Diogenes last because he did not want to leave them out. The Successions Xenophanes—Parmenides—Melissus and Leucippus—Democritus are *ad sententiam* already paralleled in both Aristotle and Theophrastus where these names are linked to each other for doctrinal reasons, and the word pupil is used.<sup>168</sup> T's account from Xenophanes to Ecphantus has been distributed by Diels over the bottom of the pages in the *DG* as lemmata of A 1.3 (no Parmenides and Melissus in either P or S), and as parallels for S 1.10.12 (Xenophanes) and 1.10.14 (Metrodorus and Democritus, corrected to chronological order in Diels' text), for P 1.3.9 ~ S 1.10.14 (Epicurus), and for S 1.10.16a ~ A 1.3.19 Diels (Ecphantus).

No explicit reference to the Eleatic Sect, which is so clearly present in T, is found in either S or P, but we have seen that S places Xenophanes in a prominent position, and we know that P abridges. P gives away that more was to be found in the source excerpted than the two Sects he mentions by name, viz. the Ionian and the Italian, by stating right at the beginning of the chapter at 1.3.1 that the Successions were 'numerous', *πλεῖστοι*, that is to say more than two (this part of the lemma was unnecessarily bracketed by Diels as an interpolation by P). Elsewhere in the treatise also other Sects and Successions are mentioned in both P and S, as we shall see—and in the proem to the whole work we have already found a reference to a Sect which also amounts to a Succession as a sort of short-list: 'Aristotle and Theophrastus and almost all the Peripatetics'. The presence of Xenophanes near the beginning of the chapter in S and P's point that there were more than two Successions

<sup>168</sup> The 'Eleatic tribe beginning with Xenophanes' is already mentioned Plato *Sph.* 242d. For Aristotle see *Met.* A 5.986b18–987a2 for Parmenides as Xenophanes' pupil and the coupling of his name with that of Melissus; the latter also e.g. *Cael.* 3.1.298b17, *Phys.* 1.2.184b16, 3.6.207a15; cf. n. 178 and text thereto. For Theophrastus see below, nn. 175, 176 and text thereto. Cf. e.g. Diels *DG* 104, Wehrli (1975) 10.



support the claim that the main information about the Eleatic Succession in T has been derived from A. Explicit references to the Italian Sect are, as we saw, extant only in P, but its existence is of course also known to T,<sup>169</sup> while S twice mentions a 'Pythagorean'.<sup>170</sup>

In S the excerpts from A are distributed over three blocs separated by abstracts from sources extraneous to A. The Successions are (1) the explicitly so designated Ionians from Thales to Archelaus (interrupted as we have seen by the odd couple Xenocrates Xenophanes) at 1.10.12, (2) the Atomists (not qualified as such) from Leucippus to Epicurus at 1.10.14, and (3) Plato followed by Aristotle at 1.10.16a. In cases (2) and (3) the (rather partial) Succession is not indicated in an explicit way and only suggested by the sequence of the lemmata that are involved.

There are also traces of a systematic arrangement according to similarities of doctrine: the Atomists that form the second part of the Eleatic Succession but include a Pythagorean, i.e. an Italian. And there are similarities of doctrine and master-pupil relationships between Xenophanes and his followers, as well as among Thales, Anaximander, and Anaximenes; this is already so according to Theophrastus<sup>171</sup> (no Anaximander and Archelaus in Arist. *Met.* A, so no Milesian continuity there). Thales—Anaximander—Anaximenes at A 1.3 are de facto opposed to Anaxagoras as monists to a pluralist; from the point of view of doctrine the fifth member of the Succession, Archelaus, is both an infinitist (like the Aëtian Anaximander) and a dualist, so suitably comes at the end of the Succession of Ionians also because his tenet is to some degree significantly different from that of the four others. We have seen above that in A at S and P the tenets of these three Milesians are criticized from a consistently Peripatetic point of view.<sup>172</sup> For part of this chapter a diaeresis of monists and pluralists may have been involved, as e.g. much earlier in the second chapter of the first book of Aristotle's *Physics*, and explicitly and quite some time later at e.g. Sextus Empiricus, *Adversus Mathematicos* 10.310, but the doctrine of Hippasus

<sup>169</sup> T had referred to Pythagoras as the founding-father of the Italian sect at *CAG* 1.55, and mentions all three 'associations' at 5.61, τῆς μὲν Ἰταλικῆς καὶ Ἰωνικῆς καὶ Ἑλεατικῆς ξυμμορίας.

<sup>170</sup> 'Philolaus the Pythagorean' at S 1.10.12, 'Ecphantus one of the Pythagoreans' at S 1.10.16a. The designation *Italikoi* for the Pythagoreans (as opposed to others) is already in Aristotle, e.g. *Met.* A 5.987a10, a31, *Cael.* 2.13.293a20, cf. Bonitz *vv.* Ἰταλία, Ἰταλικός, and, e.g., Wehrli (1978) 12, below, n. 178.

<sup>171</sup> Thphr. fr. 226A FHS&G ~ *Phys.Op.* fr. 2 Diels *ap.* Simp. in *Phys.* 24.13–16, 26–28. See below, nn. 175, 176 and text thereto.

<sup>172</sup> n. 149 and text thereto.

plus Heraclitus has been moved away from its monist counterparts (the beginning of the lemma looks like an echo of the passages in Aristotle and Theophrastus cited above,<sup>173</sup> who already coupled their names for doctrinal reasons).

Summing this up we may say that with some effort several diadochic groupings can still be discerned: the Succession of Eleatics, and that of the Early Ionians. Or consider the grouping in which doctrine overrides school affiliation, viz. the mini-series of the (Eleatic) Atomists plus the (Italian) Pythagorean Atomist Ecphantus. We also have (the Succession of) Socrates, Plato, and Aristotle. In the fragments of Theophrastus' *Physikai Doxai* the Ionian and Eleatic Successions are to some extent already in place,<sup>174</sup> although the word *diadoché* is not used. Thales is the first natural philosopher; Thales' pupil is Anaximander, whose pupil is Anaximenes, whose pupil is Anaxagoras, whose pupil is Archelaus.<sup>175</sup> This agrees perfectly with the Ionian Succession in P, and with that of S when Xenocrates and Xenophanes have been removed. Furthermore, Xenophanes is said by Theophrastus to be the master of Parmenides, who has both Empedocles (who is said also to have followed the Pythagoreans) and Leucippus as pupils; the latter has Democritus as pupil, and Democritus is as to doctrine followed by Metrodorus.<sup>176</sup> This connection between the Early Eleatics and the early Atomists (no Ecphantus in Theophrastus) is also represented in the sources for A 1.3. Plato and Aristotle are not represented in this way, because Plato is the last person Theophrastus mentioned in this context.<sup>177</sup> In Theophrastus, as we see, there are references to what came to be called Successions, but emphasis for a linkage between names is on communality of doctrine.

<sup>173</sup> n. 165.

<sup>174</sup> As Diels admits (see above, n. 40), even though he saw this as part of the biographical genre.

<sup>175</sup> Thales first Simp. in *Phys.* 23.29–31 ~ Thphr. fr. 225 FHS&G ~ *Phys.Op.* fr. 1 Diels; Anaximander as Thales' pupil and Anaximenes as that of Anaximander Simp. in *Phys.* 24.13–14 and 24.26 ~ fr. 226A FHS&G ~ *Phys.Op.* fr. 2 Diels, Anaxagoras as pupil of Anaximenes and Archelaus as that of Anaxagoras Simp. in *Phys.* 27.2–3 and 27.23–24 ~ fr. 228A FHS&G ~ *Phys.Op.* fr. 4 Diels.

<sup>176</sup> Parmenides as pupil of Xenophanes Alex.Aphrod. in *Met.* 31.8–9 ~ Thphr. fr. 227C FHS&G ~ *Phys.Op.* fr. 6 Diels, D.L. 9.21 ~ fr. 227D FHS&G ~ *Phys.Op.* fr. 6a Diels; Leucippus following Parmenides and Xenophanes Simp. in *Phys.* 28.45, Democritus as pupil of Leucippus Simp. in *Phys.* 28.15; Metrodorus linked with Democritus Simp. in *Phys.* 28.27–28 ~ Thphr. fr. 229 FHS&G ~ *Phys.Op.* fr. 8 Diels.

<sup>177</sup> Plato as the last to be treated Simp. in *Phys.* 26.7–8 ~ Thphr. fr. 230 FHS&G ~ *Phys.Op.* fr. 9 Diels.

Theophrastus' picture is to some extent anticipated in Aristotle. In the first book of Aristotle's *Metaphysics* the emphasis on doctrine is even stronger, although here too we are occasionally informed about relative chronology and there is some mention of master-pupil relationships and group allegiance. For Aristotle the Early Atomists Leucippus and his 'disciple' Democritus belong together. And the Pythagoreans, 'as they are called', or Italians, of which there are two factions, are likewise distinguished from the rest. Xenophanes, Parmenides, and Melissus form a group, Parmenides being the 'disciple' of Xenophanes. But there is no Ionian lineage, because Anaximander and Archelaus are prominently absent here.<sup>178</sup> The first beginnings of the idea of an Ionian Succession are due to Theophrastus.

A number of lemmata with name-labels without precedent in Aristotle and Theophrastus, hard to place consistently in the sources for the chapter, may eventually have been introduced more or less at random in the *Placita* chapter. The important lemma with the name-label Pythagoras was certainly inserted much later, but may have been preceded by one with as name-label 'Pythagoreans' that as to doctrine, presumably, included Philolaus just as in Aristotle.<sup>178a</sup> The principles of these Pythagoreans are 'limited and unlimited' (Arist. *Met.* A 5.986a18–19), while those of the next group of Pythagoreans mentioned by Aris-

<sup>178</sup> Atomists *Met.* A 4.985b4–5, Pythagoreans 5.985b23, 986a22 (*Italikoi* 5.987a10), Xenophanes and his followers 5.986b18–22. For Plato and Aristotle see e.g. Wehrli (1975) 11–12, for precedent in Aristotle Mansfeld (1986b) 11–15, for precedent in Plato, who speaks of the Eleatic clan beginning with Xenophanes, and of Ionian (meaning Heraclitus, who in the later literature is not included in the Ionian Succession) and Sicilian (i.e. Empedocles) Muses at *Sph.* 242d–e see e.g. Mansfeld (1986b) 24–25, Frede (2004) 43; for Aristotle on *Italikoi* cf. above, n. 170. Aristotle does not mention the philosopher Archelaus; Philp. in *An.* 71.15–18 identifies the anonymous and hypothetical 'someone else' (ἐἷ τις ἄλλος) mentioned together with Anaxagoras at Arist. *An.* 1.2.404a25–26 as Archelaus, but Philoponus is not a reliable authority, and anyhow no anticipation of a Succession is here involved. In Aristotle Anaximander's name is found four times elsewhere: (1) in the company of Empedocles and Anaxagoras, because the three of them 'discharge the opposites from the One', *Phys.* 1.4.187a20–23; (2) some of his prose seems to be quoted in the long discussion of the various uses of the idea of the in(de)finite at *Phys.* 3.4.203b11–14; (3) he is one of 'ancients' found in the company of those who said the earth stays where it is because of its equal distance from what surrounds it, *Cael.* 2.13.295b12; (4) he is found in the company of Anaxagoras ('together all things'), Empedocles (with whom he shares the concept of 'mixture'), and Democritus, who held something similar, *Met.* A 2.1069b20–23. In all these four cases 'similar' views are concerned, presumably collected as species of physical propositions of a certain kind (see below, Section 14); no Successions involved. For possible allusions see Bonitz, v. Ἀναξίμανδρος.

<sup>178a</sup> See below, n. 366 and text thereto.

totle are ‘limit and unlimited’ (*Met.* A 5.986a23). Presumably the name-label Philolaus replaced this earlier name-label. If this suggestion is acceptable, we have perhaps found why the lemma Philolaus comes before the lemma with name-label Pythagoras in S, which as to contents is late.

Alt has also perceptively pointed out that A 1.3 does not contain name-labels belonging to figures to be dated later than the early Hellenistic period,<sup>179</sup> while elsewhere in the *Placita* also later individuals (most famously Posidonius and Asclepiades, singled out by Diels for special emphasis) are mentioned often enough. The Ionian Succession in A explicitly ends with Archelaus.<sup>180</sup> But in the proem of Diogenes Laërtius, to mention only this author, the Ionian philosophy continues with Archelaus’ purported pupil Socrates and then separates into three different branches, ending with respectively Clitomachus, Chrysippus, and Theophrastus. The much shorter line of the Ionian Succession in A appears to reflect an earlier state of diadochic systematization than the one found in Diogenes Laërtius. The long Pythagoras lemma is a special case. Pythagoras himself is mentioned neither by Aristotle nor by Theophrastus in contexts like the present one, though ‘the Pythagoreans’ of course are. The account pertaining to A’s (Platonizing and Neopythagorean)<sup>181</sup> Pythagoras rather than the Pythagoreans in general points at later revision, perhaps quite some time later. We have seen above that the synchronism of Pythagoras and Polycrates at P 1.3.7 *ad fn.* (~ A 1.3.9 Diels) derives from Apollodorus’ *Chronika*, so cannot be earlier than, say, 125 BCE. Alt’s *terminus post quem* is the early Hellenistic period, while that provided by the Apollodorean echo implies an even later date. Presumably, and probably, we have to posit several interventions aiming at upgrading, one after the other.

A situation to some degree similar to that in 1.3 also holds for the sequence of theological tenets in 1.7. There are no parallels in T here, while P has only eight of S’s twenty-three lemmata. But otherwise conditions are better than for 1.3, in fact quite good, for the chances are that S at 1.1.29b, that is over more than four pages in Wachsmuth’s edition, copied out the whole sequence in A from Thales at the beginning to Epicurus at the end more or less unchanged, so we do not need to reconstruct this part of the chapter. The sequence

<sup>179</sup> Alt (1973) 153.

<sup>180</sup> As at Hipp. *Ref.* 1.10, who however loosely speaks of ‘physical philosophy’.

<sup>181</sup> Burkert (1972) 53–96, and e.g. 57–58 on P 1.3.7 ~ A 1.3.8 Diels.

of the lemmata retained by P is the same as that of their parallels in S. And S this time cites his Aëtian abstracts one after the other, without interpolating texts from other authors (and without coalescing material from other Aëtian chapters). The arrangement of the tenets is for the most part according to the substance or essence of the divinity, displayed on a gliding scale. Nevertheless the chapter from A 7.2 begins with the Ionian Succession, though the designation is not used: Thales—Anaximander at P 1.7.2–3, Thales—Anaximander—Anaximenes—Archelaus—Anaxagoras at S 1.1.29b p. 34.8–18 W.

This is almost exactly the sequence of name-labels we have in A at P 1.3.1 + 1.3.2–5 ~ S 1.10.12 (without Xenocrates and Xenophanes). In the theological chapter Archelaus and Anaxagoras have swapped places, and have done so for a reason which has to do with the tenets, which once again prove to be more important than the name-labels and their implied relative chronology. Archelaus' tenet that the God is 'air and intellect, this intellect not being the creator of the cosmos', is perfectly placed on a gliding scale between the tenet of Anaximenes, whose divinity is 'air' (explained in Stoizing terms in an added note), and the tenet of Anaxagoras, about an 'intellect which is the creator of the cosmos'. Thales, in the first lemma of this series, is provided with the historically false but doxographically fitting doctrine that the God is the intellect of the cosmos, so he has become a worthy spiritual ancestor of Archelaus, Anaxagoras, and a number of others comprised in this chapter. We should observe that this Thalesian doctrine is a hyper-interpretation of one already attributed by Aristotle, of which also other traces are left in this lemma.<sup>182</sup> Anaximander's doctrine has not been upgraded in this way, for his divinities, the 'infinitely many heavens' (or rather 'kosmoi': οὐρανοί here is equivalent to κόσμοι at P 1.3.2 ~ S 1.10.12), are not said to be intellects. The doctrines that follow after the Anaxagoras lemma are diaeretically sorted according to the substance or essence or form of the divinities that are concerned. The sequence of the name-labels is not according to Succession or Sect, although some clusters can be discerned at S 1.1.29b: p. 35.9–12 W. Zeno—Mnesarchus—Boethus (unchronological), but 'the Stoics' far away at p. 37.20–38.3 W.; p. 35.15–18 W. Parmenides—Melissus plus Zeno—(Empedocles);<sup>183</sup> p. 36.5–37.19 W. Polemo—Xenocrates—

<sup>182</sup> See below, nn. 369–372 and text thereto.

<sup>183</sup> Name-label restored by Wachsmuth, who follows earlier suggestions, e.g. Diels (1881) 345–346.

Plato—Aristotle, where Polemo comes before Xenocrates instead of following after him in the line of Succession, and Xenocrates in the same unchronological way precedes Plato. We note that he is represented as a sort of intermediary between Plato and the Stoics.<sup>184</sup> Thus, the contents of A at S 1.1.29b are well organized when considered from a systematic, that is to say diaeretic point of view, and considerably less so when considered from that of Succession, or Sect, though there are some traces of the latter kind of arrangement. The list of name-labels from Anaximander to Speusippus p. 34.13–35.4 W. moreover impresses one as alphabetical. An important difference with ch. 1.3 is that two name-labels have been included, viz. p. 35.10 Mnesarchus (a pupil of Panaetius, *vigebat* 110/9 BCE) and p. 34.26 W. Posidonius ('ultimus fere Placitorum philosophus', as Diels—discounting Xenarchus as a partisan addition of A—posits *DG* 100 and in the index), which are much later than the latest of the name-labels in the other chapter.

Although as to topic and contents A at S 1.1.29b on the one hand and the Epicurean doxography at Cic. *N.D.* 1.25–41 and Phld. *Piet.* PHerc. 1428 cols. 1–15 on the other (the latter two famously printed in parallel columns *DG* 531–550) have much in common, there are important differences.<sup>185</sup> In function of organization the Cicero passage is much more up to date than the *Placita* passage as reported in P and S. In Cicero master—pupil relations as well as positions in a Succession are explicitly formulated, though even here no ordering according to Sect and Succession has been imposed throughout, and there is more information on the Early Academics, the Peripatetics, and especially the Stoics, the favourite opponents of the Epicureans.<sup>186</sup> In A, the doxa

<sup>184</sup> See below, text to n. 196.

<sup>185</sup> Further discussion has to be postponed to another occasion; cf. the preliminary remarks below, nn. 188, 264, 300, 369, and Section 12, *ad fin.* Diels' complicated discussion *DG* 121–128 is still indispensable. The most recent studies of the Epicurean doxography in *N.D.* Book I we have seen are McKirahan (1996), who adduces what he calls the 'Aristotelian-Theophrastean tradition' on the principles, though not its reverberations in A 1.3, and who fails to compare A 1.7; and the useful comments of Dyck (2003) 8–9, 83–114, who for the most part compares the contents of individual lemmata with what is found on these matters elsewhere. For a diagram of the Successions in Cicero see Steinmetz (1966) 155.

<sup>186</sup> See *N.D.* 1.26, *post* (i.e. after Thales) *Anaximenes*; 1.26 *Anaxagoras, qui accepit ab Anaximene disciplinam*, 'who took over the school from Anaximenes'; 1.32, *Speusippus avunculum Platonem subsequens*, 'succeeding to his uncle Plato'; 1.33, Plato as Aristotle's *magister*; 1.34, Aristotle's *condiscipulus* 'fellow pupil' Xenocrates; *ex eadem Platonis schola Ponticus Heraclides*, 'from the same Platonic school' 1.35, Strato as *auditor* 'follower' of Theophrastus; 1.37, Aristo as *discipulus* 'pupil' of Zeno, and Cleanthes, *qui Zenonem audivit*, 'who was

of Epicurus comes last (as it quite often does in A); in Cicero, the exposition of Epicurus' theology also follows, but is not part of the doxography. There is a lot of explicit and quite aggressive Epicurean criticism of the doxai of others in Cicero, but very little in Philodemus (but the text has not been preserved very well in parts), and none at all in this section of A. Diels attributes these virulent objections to Cicero (*DG* 122–124), whom he criticizes very severely and believes to have been influenced by the rude invective of the Epicurean Zeno (*ibid.* 126–127), while according to him civilized Philodemus depends on another civilized Epicurean, Phaedrux. Cicero, too, one may suggest, can be made to depend on Phaedrux, as there are ingredients in his account which are not in Philodemus.<sup>187</sup> However this may be, Cicero's version demonstrates to what kind of purpose a more restrained doxography such as that of Philodemus, or P 1.7.2–9, could be adapted. But the basic contents of the three tenets at the beginning of the sequences in Cicero, P, and S 1.10.29b (and at the beginning of the philosophical tradition concerned with theology), viz. Thales, Anaximander, and Anaximenes, are virtually identical, and similar correspondences are also visible in relation to several other name-labels; even Diels had to admit this.<sup>188</sup>

Diels failed to indicate that the Successions and Sects are also represented elsewhere in A. In fact, scholars have hitherto neglected their role.<sup>189</sup> It should, of course, be admitted that references of this nature are scattered more or less at random over the *Placita*, and that the Successions are not a dominant principle of organization, as they are in Diogenes Laërtius; quite the reverse. This, too, helps explain the

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Zeno's pupil'; 1.38, Persaeus, *eiusdem Zenonis auditor*, 'also Zeno's follower' 1.41, Diogenes as *consequens* 'successor' of Chrysippus. Cicero varies the phraseology.

<sup>187</sup> *DG* 122–124, note e.g. *ibid.* 123, 'Cicero's dishonest frivolity', 'Ciceronis fraudulenta levitas', 128, 'Cicero's deceptions', 'Ciceronis ... fraudes'. For this kind of evaluation cf. above, n. 28. For Zeno's invective, see *DG* 126–127, with reference to *N.D.* 1.93; for elements in Cicero which 'non extant in Philodemo', see *DG* 126 and the apparatus *ibid.* 545–546.

<sup>188</sup> For the three early Ionians see *DG* 125, 128, and the apparatus *ibid.* 531, for the other similar lemmata *ibid.* 128. Diels states *DG* 125 'those who seek refuge [for what is in Cicero] in a resemblance with the *Placita* are wrong', 'errant qui ad Placitorum confugiunt similitudinem', but *ibid.* 128 suggests derivation from an older corpus of *Placita*, not A or P. This turns the account of Cicero/Philodemus into a cousin writing of the second part of A 1.7, which is acceptable as long as we do not have to think of the single *Vetusta Placita*. See also above, n. 185.

<sup>189</sup> Preliminary remarks in Runia (1999b) 199 n. 34, 209 n. 61.

disorder in ch. 1.3. This chapter is essential because it deals with the principles of the philosophers. Yet no attempt was made to upgrade it in accordance with later, let alone the latest views on the Successions of the philosophers. On the other hand, the matter-of-course way in which, as we shall see, Successions and Sects turn up again and again shows that the compendium, for all its Peripatetic roots, is quite firmly embedded in what with some latitude we may call the Hellenistic historiography of philosophy. *Pace* Diels, the Successions in A 1.3 do not constitute an exception in the *Placita*.

Because S, as we know, is often lacking, we have in the first place looked at passages where both P and S provide information, though a few examples from P which are beyond reasonable doubt will also be mentioned briefly.

There is a rather unclear phrase in A at S 1.11.3, ‘those from Thales and Pythagoras, I mean those having descended as far as the Stoics with Heraclitus’ (οἱ ἀπὸ Θάλεω καὶ Πυθαγόρου, λέγω δὲ τοὺς μέχρι τῶν Στωικῶν καταβεβηκότας σὺν Ἡρακλείτῳ κτλ.). P at 1.9.2, the parallel lemma, avoiding ambiguity at the cost of disinformation, *more epitomatoris* leaves out Heraclitus and replaces ‘I mean ... Heraclitus’ with ‘the Stoics’. The term καταβεβηκότας without doubt pertains to a line of descent, i.e. a Succession. But it is not clear from (ἀπὸ) whom the Stoics, the last in the line, are said to have descended. Presumably Heraclitus is not included in the Succession from either Thales or Pythagoras, but introduced as an independent ancestor of the Stoics. T at 4.13, who as so often indulges in a bit of rewriting, says ‘Thales and Pythagoras and Anaxagoras [Anaxagoras lacking in P and S] and Heraclitus and the company of the Stoics’. This does not help us with regard to the Stoics, or Heraclitus, but the preserved name-label Anaxagoras suggests that A indeed had the Ionian Succession in mind, in which, as we have seen, Anaxagoras is explicitly included in ch. 1.3 and implicitly in ch. 1.7. Pythagoras is to be understood as the archegete of the Italian line.

In the same chapter, A at P 1.9.3 ~ S 1.11.3, ‘those from (ἀπὸ) Democritus’ are mentioned. T 4.13 expands to ‘Democritus and Metrodorus and Epicurus’, for it is unlikely that both P and S have abridged A in precisely the same way. ‘Those from (ἀπὸ) Pythagoras’ are also mentioned elsewhere, e.g. P 1.14.2 ~ S 1.15.6a (followed in S by a brief Anaxagoras lemma and one on ‘those from Leucippus’), at 2.9.1\*, and at 2.12.1\*, ‘Thales Pythagoras and those from him’, i.e., from Pythagoras, so here too both the Ionian and the Italian Succession are hinted



at. P at 3.2.1 has ‘some of those from Pythagoras’, S 1.1.28.1a the virtually equivalent ‘some of the Pythagoreans’, yet P suggests Succession and S suggests Sect. A at P 4.14.3 ~ S 1.52.16 has ‘those from Pythagoras’, P omitting ‘and from the mathematicians’. ‘The Pythagorean(s)’ is/are also found several times elsewhere, e.g., 2.30.1\* in both P and S (S adding Philolaus), ‘Philolaus the Pythagorean’ at S 1.10.12, ‘Ecphantus of Syracuse, one of the Pythagoreans’ at S 1.10.16a and T 4.11 (slightly different formula), and ‘Hicetas the Pythagorean’ at P 3.9.2. P 4.16.4 has ‘Plato and those from him’, the parallel lemma S 1.53.4 ‘those from Plato’. Note that P’s abridgement may be sloppy: e.g. at 4.3.2 he reads ‘those from Anaxagoras’, while S 1.49.10b has no less than four name-labels (of which Wachsmuth deletes one), and no ‘from’ someone. These name-labels include Anaximenes—once again, doctrine proves more important than name-label. S 1.18.1d has ‘Zeno and those from him’, P 1.18.4 more blandly ‘the Stoics’. But the epitomizing rephrasing can also be quite acceptable: S at 1.17.1 has ‘Thales and those from him’, which P 1.17.1 renders as ‘the ancients’ (οἱ ἀρχαῖοι), presumably the Ionian Succession as defined in A 1.3, so one feels that this time at least he shows that he knows what he is doing. P 1.18.1 ~ S 1.18.1a has the interesting formula ‘all the physicists from Thales’; at 2.6.1\* we find the label ‘the physicists’, οἱ φυσικοί, which has presumably been coalesced away by S.<sup>190</sup> P 1.18.1 also has ‘up to Plato’, which we believe has been omitted by S, who (as is clear from his meager contribution in this respect to ch. 1.3, and as has been pointed out above) is less interested in Successions because of his own different project. Nevertheless he sometimes preserves information missing in P’s epitome, as at 1.13.1d, ‘Thales and those after him in sequence’ (Θαλῆς καὶ οἱ ἐφεξῆς). The doxa at issue, echoing and ultimately deriving from Aristotle’s well-known verdict concerning the principle of the early physicist monists, has been flattened out, but the formula οἱ ἐφεξῆς without any doubt pertains to a Succession; we have seen above that the word ἐφεξῆς plays a vital part in the note about the Successions at P 1.3.6 ~ S 1.10.12.<sup>191</sup>

An interesting reference to a Sect has been preserved in S 1.52.3 (4.13.7 Diels; one would have expected P 4.13 to have preserved this

<sup>190</sup> At Arist. *Met.* B 4.1001a9–14 οἱ περὶ φύσεως are contrasted with the Pythagoreans and Plato. For the lemma see below, text to n. 198, n. 266 and text thereto, and Part. II, Spec. Rec. 2.6.1\*.

<sup>191</sup> Cf. above, text to nn. 151, 159.

lemma as well): ‘Timagoras, one of those who in many respects [or: in numerous passages in his works] debased the Epicurean Sect’ (Τιμαγόρας, εἷς τῶν παραχαράξαντων ἐν συγχοῖς τὴν Ἐπικούρειον αἵρεσιν). Here the school of Epicurus is explicitly recognized, just as in A at P 5.19.2 (not paralleled in S), οἱ περὶ Ἐπίκουρον. The names of Sects (Stoics, Peripatetics, Academics) may function as generic name-labels. The remark about ‘Aristotle and Theophrastus and almost all the Peripatetics’ in the proem of the work not only acknowledges and names the Sect, but also, as we have seen, hints at the Succession: first Aristotle, then Theophrastus, then the rest. Designations of Sects serving as name-labels are also found elsewhere throughout the work. There are numerous references to ‘the Stoics’, but in S 1.50.14–16 not only the Stoics but also the Academics and the Peripatetics are listed. These Sects are also cited elsewhere at this same chapter of S: 1.50.18 ‘those from the Academy’, 1.50.20 the Stoics, 1.50.23 the Peripatetics, 1.50.29 the Peripatetics, and 1.50.34 in one and the same lemma the Stoics, the Academics, and Epicurus, the latter clearly (and hardly to our surprise) representing his whole Sect. This lemma may be all that is left of a separate *Placita* chapter or appendix on the Wise Man, a specifically Hellenistic theme, epitomized away by P and presumably already abridged by A. ‘Some of the Academics’ are mentioned at S 1.52.10, ‘practically all the Peripatetics’ in P 3.2.5 ~ S 1.28.1a, and ‘Xenarchus the Peripatetic and some others of the same Sect’ (τῆς αὐτῆς αἱρέσεως) at S 1.49.1b (not in P), and P 5.26.3 mentions ‘the Stoics and the Epicureans’ (not in S). T 4.12 mentions ‘Zeno of Citium, son of Mnasaïos, the pupil of Crates the founder of the Stoic Sect’ (Ζήνων δὲ ὁ Κιτιεὺς ὁ Μνασαίου ὁ Κράτητος φοιτητῆς ὁ τῆς Στωικῆς ἄρχας αἱρέσεως), but may have added the reference to the Sect *suo Marte*. An exceptional reference to the medical Sect of ‘the Empiricists’ is at P 5.18.3.<sup>192</sup>

It would be boring to cite all the instances of Succession-like sequences in P, many of which cannot be paralleled from S because large

<sup>192</sup> Diels *DG* 184–185 argues that S 1.49.1b (lemma 4.3.10 in his numbering) on ‘Xenarchus the Peripatetic and some others of the same Sect’ was inserted by A and betrays his Peripatetic education. And ‘anyone not unfamiliar with the genuine color of the *Placita*’ (‘qui genuini Placitorum coloris non ignarus est’, a nice rhetorical argument pertaining at the time of writing only to the author himself) sees that the ‘frequent references to the Academics’ and that to Timagoras and the Epicurean Sect do not belong with the true *Placita* tradition. This special pleading clearly aims at eliminating references to philosophical Sects from this tradition. One wonders that he does not object to the frequent use of the term ‘the Stoics’.

parts of S are lost, but on the whole the difference between the two main sources in the rest of the work corresponds to that to be detected in regard to ch. 1.3, even though, as we saw, there are also instances where S has preserved material that has been abridged away by P. But S has left out a telling remark preserved by A at P 2.6.6\*: ‘Plato pythagorizes also as to these matters’, viz. the stereometrical shapes of the physical elements (Πλάτων δὲ καὶ ἐν τούτοις πυθαγορίζει).<sup>193</sup> This is a bit more explicit than the often-found combination of the name-labels ‘Plato Pythagoras’ (or conversely), and testifies to the acceptance of the view that the *Timaeus* is derived from the work of a Pythagorean from Locri, which we know to be a forgery composed for the purpose of proving Plato’s dependence. It is clear that the connection in A is based on this purported identity of doctrine.<sup>194</sup>

Another telling passage in S is 1.1.29b, on Xenocrates’ theology, divided into two parts, of which the second begins with the words ‘he, too, holds’ (ἄρεσκει δὲ καὶ αὐτῷ).<sup>195</sup> At the end of the lemma we read that ‘these [i.e. the views just described in the second part] he donated to the Stoics, and the previous [i.e. the views described in the first part] he has paraphrased from Plato’. Communality of doctrines again, and a remarkable middle position for Xenocrates, who is, so to speak, looking both backwards and forward. He transcribed (and modified in the course of transcription) a Platonic doctrine, and bequeathed another doctrine, one of his own devising, to the Stoics. It is not to be excluded that backstage of this analysis the Ionian Succession is hovering, viz. a segment Plato—Xenocrates—the Stoics, in which *pour le besoin de la cause* the part of a Succession beginning with Zeno is coalesced with a branch of the Ionian line beginning with Plato. Note moreover that Xenocrates’ name-label at S 1.1.12b p. 36.6 is the only one accompanied by both patronymic and ethnicon in the long series of name-labels in the second part of A 1.7, the chapter containing the answers to the question ‘Who is the God?’ At its first occurrence in A on the other hand, viz. A 1.3 at S 1.10.11b ~ T 4.11, it has neither patronymic nor ethnicon in S and only the ethnicon in T.<sup>196</sup>

<sup>193</sup> See Tarrant (2000) 76, and cf. below, n. 277 and text thereto.

<sup>194</sup> See further Part II, chapt. 6, sect. 7.

<sup>195</sup> See above, n. 64.

<sup>196</sup> The Homeric line τίς πόθεν εἰς ἀνδρῶν; πόθι τοι πόλις ἥδὲ τοκῆς comes to mind (e.g. *Od.* 10.325, first half cited Xenophanes fr. B22.6 DK, etc.) In P and S for A 1.3 the transmission of ethnicon and patronymic is not good; sometimes P is fuller than S, sometimes S fuller than P. T is good for the ethnica and patronymica of his

The presentation of full credentials (even fuller than at A at S 1.10.12 ~ 1.3.23 Diels) is truly remarkable, perhaps suggesting that most of the information should have been included in the earlier chapter.

Finally, it should be pointed out that, although tenets are more important than name-labels for the order of the lemmata in a chapter, and although for this reason the dates of the personalities mentioned do not really influence this order, there is nevertheless a tendency to place the very first philosophers, that is to say the founding fathers of the Ionian (Thales), Italian (Pythagoras), and Eleatic Successions (Xenophanes) of ch. 1.3, or their immediate followers, in the first lemmata. The accounts of these first origins hold a special fascination, like charter myths or foundation legends. To some extent this may explain the ostensible chaos of the sequence of name-labels listed after the first members of the three Successions in ch. 1.3.

Because we can draw on our own careful reconstruction we shall restrict the inventory of these priorities to A Book II. Our reconstruction of the sequences of the lemmata of this book is not only based, like that of Diels, on P's order. As a check on the order in P's epitome, the diaereses based on the affinity and contrast of doctrines have also been taken into account. Whenever S clearly has copied out a (virtually) entire chapter, the order of S is a check on that of P too. If we were to include the evidence of P for the other books the examples would be multiplied.<sup>197</sup> We should however observe that the placing at the beginning of name-labels of early figures also depends on the possibility of constructing a feasible diaeresis, and that the sequence of the lemmata after these first figures is determined by doctrine rather than Succession.

Ch. 2.1.1\* has Pythagoras, and the first of a long series of name-labels in the next lemma (on a different sub-topic) are Thales Pythagoras. The first name-label at 2.4.1\* is that of Pythagoras. Ch. 2.6\* opposes the physicists i.e. Ionians and presumably a few others (thus P) and/or the Stoics (thus S) in its first to Pythagoras in its second lemma.<sup>198</sup> The ear-

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Eleatic succession. In the remains of Theophrastus' *Physikai Doxai* the ethnicon has been preserved more often than the patronymic. Full information on such matters (but not always) in Diogenes Laërtius. Cf. also below, n. 361.

<sup>197</sup> Lachenaud (1993) 36–37 attempts to discover an authorial intention behind various sequences of lemmata, but his overview is based on P only and fails to take the Successions into account in a systematic way; a brief comment in a later paper, Lachenaud (1998) 54–55, is not useful.

<sup>198</sup> See above, n. 190, below, n. 266.

liest philosopher mentioned in 2.7\*, first lemma, is Parmenides. The first lemma of 2.9\* mentions the followers of Pythagoras. The first name-label of three at 2.10.1\* is Pythagoras. The first lemma of 2.11\* has Anaximenes. The first lemma of 2.12\* has ‘Thales, Pythagoras, those from him’, the second notes a discovery attributed to Pythagoras. The first lemma of 2.13\* has the name-label Thales, of 2.18\* Xenophanes. The first name-label at 2.20.1\* is Anaximander, the second at 2.20.2\* again Xenophanes, while at 2.20.3\* we have Anaximenes Parmenides. The first lemma of 2.21\* has the name-label Anaximander, the first at 2.22\* has Anaximenes (plus Alcmeon), the first at 2.23\* again Anaximenes. The first lemma at 2.24\* has the name-label Thales, the first at 2.25\* Anaximander, and the first at 2.28\* Anaximander Xenophanes (plus Berosus). The first at 2.29\* has Anaximander, and the first at 2.30\* ‘some of the Pythagoreans, among whom Philolaus’.

No less than nineteen of the thirty-two chapters of this book (not counting the extra ones to be found in the *Specimen Reconstructionis*) display these early name-labels in their first lemmata, thus attesting the contribution of the beginnings of the three grand Successions to lemmata order. It is to be excluded that this crowding of early name-labels at the beginning of chapters is a mere coincidence.

This result is consistent with the evidence concerning the notion of the ‘first finder’, *πρῶτος εὐρετής*, in the *Placita*.<sup>199</sup> The most important are Thales and Pythagoras, the archegetes of the Ionian and Italian Succession; the former with two ‘firsts’, the latter with three. The second in line of the Eleatic Succession, Parmenides, is mentioned for one ‘first’, and the dissident Pythagorean Ecphantus for one, too. The texts are: Thales was the first to say that the moon is illuminated by the sun (*ἔφην*, 2.28.5\*), and the first to declare that the soul has an ever-moving or self-moving nature (*ἀπεφίγητο*, P 4.2.1 ~ S 1.49.1a). Pythagoras was the first to call philosophy by this very name (*προσαγορεύσας*, P 1.3.7 ~ S 1.10.12), the first to call the container of all things ‘cosmos’ (*ὠνόμασε*, 2.1.1\*), and ‘is said’ (*λέγεται*) to have been the first to have recognized the tilting of the zodiac circle (2.12.2\*). Parmenides was the first to confine the inhabited places of the earth to the two solstitial zones

<sup>199</sup> On this theme see e.g. Kleingünther (1934), Mejer (1978) 52, 86 n. 50, with references, Mansfeld (1986a) 22–23 with n. 103. Zhmud (2006) 239 posits that this motif is particularly prominent in Eudemos, which fits in with the argument at Mansfeld (2000b) 200–201 that Eudemos may be a source for some of the information in the *Placita*.

(ἀφώρισε, A at P 3.11.4). Finally, Ecphantus was the first to declare that the monads are corporeal (ἀπεφίγητο, A at S 1.10.6a). As a representative selection of seminal and decisive inventions in philosophy and science this little group is not such a bad choice.

## 8. Stoic Physical Theory, Aristotelian Precedent

*Summary.* In this section we study the relation of the *Placita* to the detailed contents of the two divisions of the Stoic *physikos logos* as reported in Diogenes Laërtius 7.132–133. It is first divided eidetically into corporeals such as elements, principles and gods, and incorporeals such as place and void. This division compares well with the contents of Book I of the *Placita*, and can be integrated with concepts from Aristotle’s theoretical physics. The two most important parts of the generic division in Diogenes’ text are ‘on the cosmos’ and ‘causal explanation’. Philosophers as well as astronomers study some of the issues pertaining to the cosmos, just as mathematicians, astronomers, and doctors study some of the issues pertaining to causation. Other such issues are the preserve of the philosophers. Aristotle already discussed the demarcation between philosophy and science, and Chrysippus noted the disagreement among philosophers and doctors concerning an issue known to us from ch. 4.5, ‘on the regent part’. We note that this description of standard Stoic physics is problem-oriented, just as was the case for physics according to Aëtius’ proem. The selection and sequence of topics listed at D.L. 7.132–133 are consistent with the contents of Books II to V of the *Placita*. This also holds for the brief account of the details of Stoic physics at D.L. 7.142–159.

The term φυσικός λόγος (we recall P in his proem telling us that this *logos* is what he is going to teach)<sup>200</sup> is found at the beginning of the account of Stoic physics in Diogenes Laërtius 7.132. It means the part of philosophical theory concerned with physics (cf. e.g. D.L. 7.39, Plu. *SR* 1035D). Two divisions of this part are listed. We shall see that the contents of the first of these are roughly parallel to those of A Book I, and those of the second to those of A Books II–V.

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<sup>200</sup> See above, n. 21 and text thereto; for some examples of the formula below, n. 334; D.L. 7.160 also uses the formula φυσικός τόπος in this sense. Theiler attributes D.L. 7.132–133 to Posidonius (his fr. 254) because of the parallel in fr. 18 E.-K. ~ 255 Th., see Theiler (1982) 2:133–137; for fr. 18 E.-K. (the famous abstract from Posidonius’ *Meteorology* by Geminus) see below, nn. 230, 378, 387, and Section 16. Posidonius’ Φυσικός Λόγος is quoted eight times in the sequel: D.L. 7.143, 134, 140 (twice), 149, 144, 145, 153 ~ fr. 4–11 E.-K., but (although this is sometimes claimed) this does not entail that the division at D.L. 7.132–133 is to be attributed to him.

The first division of the *physikos logos* is one into seven species (εἰδικῶς), i.e. subparts:<sup>201</sup> ‘they divide the *physikos logos* into (1) the part (*topos*)<sup>202</sup> about bodies, (2) the part about principles, (3) the part about elements, (4) the part about gods, (5) the part about bounding entities, (6) the part about place, (7) the part about void’.<sup>203</sup> We note that diaeresis as a method was also part of Stoic logic, see D.L. 7.61–62; it was itself (unsurprisingly) subdivided into species, and distinguished by them from μερισμός, *partitio* (‘classification’).<sup>204</sup>

This list of seven sorted items naturally divides into two halves: parts (1), (2), (3), and (4) pertain to Stoic corporeals, which presumably is the reason why ‘bodies’ come first, and parts (5), (6), and (7) to Stoic incorporeals.<sup>205</sup> The division is called specific because these two sections (to be subdivided themselves) can be subsumed under a shared and extremely abstract supreme genus we know something about from other sources, viz. the enigmatic ‘something’ (the Stoic *τι*),<sup>206</sup> so are its first species (προσεχῇ εἶδη, cf. D.L. 7.61). At a first glance, Diogenes Laërtius’ enumeration seems incomplete, since topics such as fate are lacking, but a reason for this could be that it is a factor in both divisions of Stoic physics.<sup>207</sup> Although the enumeration of contents in this list is orderly enough, it apparently fails to correspond to an order of treatment; in the sequel in Diogenes Laërtius principles (7.134) are discussed before body (7.145), presumably allowing for a better performance.

<sup>201</sup> The more abstract and theoretical character of this division has been well argued by Long & Sedley (1987) 1.267–268, Brunschwig (2003) 207–209.

<sup>202</sup> For the ‘parts’ and ‘sub-parts’ of philosophy the Stoics, apart from τόποι, also used the terms μέρη, γένη, or εἶδη. The use of the word τόπος may have to do with memorization, or imaginative representation. For another eidetic division of a subdiscipline into seven *topoi* see above, n. 5, and for an Aristotelian division into six species below, n. 330.

<sup>203</sup> D.L. 7.132, τὸν δὲ φυσικὸν λόγον διαρῶσιν εἰς τε τὸν περὶ σωμάτων τὸπον καὶ περὶ ἀρχῶν καὶ στοιχείων καὶ θεῶν καὶ περάτων καὶ τόπου καὶ κενοῦ.

<sup>204</sup> Some information in App. II, ‘Diaeresis’, Mansfeld (1992b) 326–331. For μερισμός cf. above, n. 46.

<sup>205</sup> See Long & Sedley (1987) 1:268. A variety of this division, unpedantically formulated, is found Sen. *Ep.* 89.16. This is bipartite: corporeals and incorporeals, both subdivided into their ‘grades of importance, so to speak’ (*in suos, ut ita dicam, gradus*). Corporeals are divided into what creates and what is created, ‘and the created things are the elements’ (*gignuntur autem elementa*). So the creative things are the principles.

<sup>206</sup> *SVF* 2.329, 332. Cf. Long & Sedley (1987) 1:268.

<sup>207</sup> εἰμαρμένη is coextensive with God at D.L. 7.135, i.e. belongs with the specific subtopic ‘On gods’, and is that according to which the cosmos is administered according to D.L. 7.145, i.e. belongs with the generic sub-topic ‘On the cosmos’ as well.



The cluster of themes constituting the first division of Stoic physical theory can be rewardingly compared to a number of themes treated in the first book of A. Topic (1) of this εἰδικῶς division corresponds to A 1.12, ‘On bodies’; topics (2) and (3) to 1.3, ‘On principles’—we have seen that in actual practice Diogenes Laërtius’ exposition of Stoic physics begins with the principles. Topic (4) corresponds to 1.6 (heading in S lost), ‘Where did men get the concept of god(s)<sup>208</sup> from?’ plus 1.7, ‘Who is the God?’ (plus 1.8, ‘On daemons and heroes’); topic (5) is echoed in the definition at P 1.14.1 ~ S 1.15.3b, ‘shape is the surface and circumference and border of a body’; topic (6) corresponds to 1.19, ‘On place’; and topic (7) to 1.18, ‘On void’.

As was to be expected the account of physics, or *physikos logos*, provided by the *Placita* was to some extent updated, though no name-labels later than Posidonius, Asclepiades, and Xenarchus (the latter only once) were included in A. Related later works, such as Achilles *On the All* and Nemesius *On the Nature of Man*, add later tenets and names. Updating occurred through the addition of *placita* of Hellenistic philosophers, physicians, and astronomers, or e.g. the rephrasing of Platonic tenets in Middle Platonist and of Pythagorean tenets in Neopythagorean terms. But as we now submit it also came about through the adaptation of a more or less Peripatetic overview of theoretical physics to the main sections of the first subsection of Stoic physics and by the inclusion of further chapters on topics of the same ilk, which had come into fashion. The account of the principles and elements in A ch. 1.3 is in part dependent on the first books of Aristotle’s *Physics* and *Metaphysics*, as well as on the introduction to Theophrastus’ *Physics* (where for instance Anaximander was added to the list). The eidetic part of the Stoic *physikos logos* states that the principles are to be treated near the beginning, so the Peripatetic ingredient can be incorporated. But the theological chapters A 1.6–8 cannot be linked with the first books of Aristotle’s *Physics* and *Metaphysics*, or the introduction to Theophras-

<sup>208</sup> Most mss., the list of headings at the beginning of the book, and Q support the singular; editors prefer the plural. In the present chapter the singular θεοῦ is also supported by A at P 1.7.1 (*DG* 204a21, 205a17–18). The heading of A 1.8 has the singular as well, in both sources (P ‘Who is the God’, S ‘On God’). Lachenaud (1993) 81 n. 2 defends his choice by pointing at the contents of the chapter i.e. the various representations of gods, but, e.g., the various shapes of the earth are covered by a heading with the word for shape in the singular, A 3.10. D.L. 7.132 has the plural. The formulas ἔννοια θεῶν and ἔννοια θεοῦ can of course be used interchangeably, e.g. the singular θεοῦ S.E. *M.* 9.12, 25, 44, the plural θεῶν *ibid.* 20, 24, 29, 32, 34, all in the chapter περὶ θεῶν dealing with the concept.

tus' *Physics*. These chapters on God or the gods are in a position which is paralleled by that of the topic 'On gods' in the eidetic part of the Stoic *physikos logos*. Accordingly, after the two successive and interrelated chapters 'on God' or the gods (1.6–7), two additional chapters follow that arguably belong with them for systematic reasons, viz. 1.9, 'On Matter', and 1.10, 'On Idea'. What is more, in exactly this same order these three items are attributed to Socrates plus Plato at P 1.3.11 (~ S 1.10.16a, who omits Socrates, τρεῖς ἀρχαίς, τὸν θεὸν τὴν ὕλην τὴν ἰδέαν). A subpart of Stoic physics that agrees with Peripatetic physics as to the place of the discussion of principles and elements thus happens to coincide with two elements of the triad of Middle Platonist principles.<sup>209</sup>

The themes of these two *Placita* chapters, dealing respectively with the origin of the concept of God (1.6) and the issues of the existence and nature of God (1.7), are paralleled by, or rather reflect, discussions that had been going on for a long time about problems that were still very relevant.<sup>210</sup> Compare for instance Sextus Empiricus, *P.* 3.2–12, a chapter with the heading περὶ θεοῦ, which briefly treats first the origin of the concept and then the question of existence. At *M.* 9.13–48, a chapter with the heading περὶ θεῶν, various views concerned with the origin of the concept are discussed; 9.49–194, a chapter with the heading εἰ εἰσὶ θεοί, deals at length with the existence and nature of god(s). All these issues are discussed in Cicero's *De Natura Deorum* too. We cannot here go into the details,<sup>211</sup> but may point, for instance, at the first part of the account of Stoic theology in Book II: the origin of the concept and the issue of existence at 2.4–44, the nature of the gods at 2.45–72. According to an author to be dated in between Cicero and A, Philo, *Spec. Leg.* 1.32, the deity is hard to apprehend, the two principal questions being whether it exists (ἐν μὲν εἰ ἔστι τὸ θεῖον),<sup>212</sup> the other what is its substance (ἔτερον δὲ τὸ τί ἔστι κατὰ τὴν οὐσίαν); the first of these is answered *ibid.* 33–35, the second 36–44.

As to the addition of further chapters, when you already have a pair of chapters on God and gods it is only natural to add and insert

<sup>209</sup> Cf. above, text to nn. 94, 141, below, text to n. 408.

<sup>210</sup> For A at P 1.7.1 (1.7.1–10 Diels) see Runia (1996a); for the discussion concerned with the question whether the gods exist and if so, what they are (Protagoras, Plato, Aristotle, Epicurus etc.) see Mansfeld (1993a) 183–187.

<sup>211</sup> Preliminary remarks at Mansfeld (1990a) 3207–3208, comparison of passages in Sextus and Diogenes Laërtius Mansfeld (1999c) 457–459.

<sup>212</sup> Philo *Spec. Leg.* 1.32–35 (minus first and last sentences) is printed as *SVF* 2.1010 with the obsolete title *De Monarchia*, A 1.6 is *SVF* 2.1009.

one about lower divinities (1.8). When you have 1.18, ‘On void’ (περὶ κενοῦ), and 1.19, ‘On place’ (περὶ τόπου), which as to the themes concerned recall the treatment of place and void in Aristotle’s *Physics* (4.1–4 plus 6–9), a third chapter, ‘On room’ (1.20, περὶ χώρας), is an obvious complement in the context of Hellenistic philosophy. The two extant lemmata of this chapter at P 1.20.1 ~ S 1.18.1d (and we accept Diels’ addition of S 1.18.4a at 1.20.2),<sup>213</sup> which in a way conclude the two previous chapters and thus contribute to the creation of a small part of macrostructure, are consistent with this succession of themes: void place room are different qua denotation according to the Stoics and synonymous according to Epicurus (cf. *Letter to Herodotus* 40 rather than Sextus, *M.* 10.2, who attributes to Epicurus something resembling a variety of the Stoic distinction he cites *ibid.* 10.3). We note here also that ch. A 1.18 is to some extent superfluous, because in ch. A 2.9\* in the cosmological book, which according to its heading pertains to the extra-cosmic void, various views relating to void both outside and inside the cosmos are listed in spite of the heading.<sup>214</sup> But a chapter on void had to be included in the conceptual section of Book I because of the presence of this theme in the Stoic eidetic division and in Aristotle’s *Physics*, 4.6–9. There is some precedent for this repetitiousness in Aristotle’s works, because the void is not only treated in the *Physics*, but also in the cosmology of the *On the Heavens*, 4.2 (arguments of the predecessors pro and contra its existence). For the two chapters ‘On time’ and ‘On the substance of time’ (A 1.21–22), a subject not found on the list of the Stoic *physikos logos*, we may adduce the chapters on time in Aristotle’s theoretical physics, *Phys.* 4.10–14. In a natural way the doxographical chapters on time follow after the three chapters dealing with various aspects of space. ‘Luck’ and ‘necessity’, not found on the list of the Stoic *physikos logos* but of course important in Stoic philosophy, are discussed in Aristotle’s *Physics*, 2.4–6 luck (τύχη) cf. A 1.29 περὶ τύχης, and 2. 8–9 necessity (περὶ τοῦ ἀναγκαίου) cf. A 1.25–26, the difficult doublet περὶ ἀνάγκης and περὶ οὐσίας ἀνάγκης. This pair of chapters is followed by another difficult doublet, 1.27–28 ‘On fate’ and ‘On the substance of fate’ (περὶ εἰμαρμένης and περὶ οὐσίας εἰμαρμένης). We notice once

<sup>213</sup> We provisionally follow Diels’ reconstruction. S has separate lemmata at some distance from each other, one on the Stoics and one on Epicurus, while P has only preserved the name-label Epicurus and included it in the Stoics lemma, thus standing Epicurus’ view on its head.

<sup>214</sup> See Algra (1993) and Part II, chapt. 9, sect. 6.

again the adaptation of an Aristotelian account to the necessities of a Hellenistic, more especially a Stoic agenda. We have noticed that in Diogenes Laërtius' detailed though woefully brief account of Stoic physics at 7.134–159 the notion of necessity (or fate, etc.), not included in the lists of the *physikos logos*, plays its part in both its eidetic and in the generic sections.<sup>215</sup>

A large part of the macrostructure of Book I is thus indebted to the first division of the Stoic *physikos logos* and to Aristotle's *Physics*. We shall see in a moment that the designations of topical problems in physics according to the Stoic *physikos logos* are largely parallel to chapter headings in A. It is moreover attested that Chrysippus in the first book of his *On the Soul* discussed a problem in physics that was of special importance in the Hellenistic period, viz. that of the location of the regent part. He referred to many of the views that had been proposed, in contrast to his usual verbose practice characterizing them very briefly.<sup>216</sup> This is most easily explained by the influence of the style of the *Placita*. The Stoic *physikos logos*, perhaps already and to some extent influenced by an earlier version of the *Placita*, could apparently be adapted to the *Placita* format without difficulty.

The revised version of the contents of what became the first book of the *Placita* thus accommodated supplementary topics. This openness is in fact explicitly attested in A at P 1.8.1, containing not someone's tenet but the authorial comment already cited above, Section 4: 'following on the account of the gods [I 6–7] that of the daemons and heroes has to be recorded'.

The fact that an account of the principles (represented in the *Placita* by ch. 1.3) belonged to the Peripatetic tradition, together with the complementary fact that a sub-*topos* on the principles was part of the Stoic tradition, also determined the positioning of further additional material. After a short proem one had to begin with the principles. But the rigid distinction between principles (sub-*topos* 2 of the first Stoic division) and elements (sub-*topos* 3), characteristic of Stoic physics, made an introductory section on this issue, i.e. ch. 1.2, unavoidable. We have seen that in the first lemma of this chapter the (historically not entirely correct) claim is made that both Aristotle and Plato sharply distinguished principles and elements, whereas in the second lemma Thales is said to have failed to make this distinction and to have

<sup>215</sup> See above, n. 63 and text thereto.

<sup>216</sup> See above, text to n. 63, below, n. 225 and text thereto.

used his principle as an element—a purported mistake for which he is criticized at some length. For most of the next chapter, 1.3 ‘On principles’, the word ‘element’ is carefully avoided, although in fact (think of the criticism aimed at Thales in the previous chapter) the ἀρχή, or ἀρχαί, in several cases do function as elements (στοιχεῖα) in that they constitute not only what things are from, but also what they still are. This need not amaze us, since Theophrastus, in the discussion of the philosophers from Thales to Plato excerpted by Simplicius, as a rule only uses ‘principle’ (but this principle functions also as element), and his Anaximander literally posited the Infinite as both ‘principle and element’ (ἀρχὴν τε καὶ στοιχεῖον).<sup>217</sup>

Thus the Stoic list of topics, as we have noticed, can be interpreted as a further development of questions that are at issue in Aristotle’s *Physics*. Aristotle does not provide a systematic classification of these issues, and his order of treatment is different from that in the first division of the Stoic *physikos logos*, or in Book I of the *Placita*, but this does not matter much. The obvious conclusion is that, with the assistance of hindsight, a more or less ordered Peripatetic collection of items in the field of physics could be found to satisfy the requirements of a later time, in line with a Stoic standard pattern which presumably had become so common that, just as many technical terms in current use, it was no longer felt to be particularly Stoic.<sup>218</sup>

In this way, other Aristotelian ingredients could be preserved as well. *Physis* (φύσις) does not occur on the list of the Stoic *physikos logos*; it is defined Arist. *Phys.* 2.2, cf. the virtually verbatim quotation of this definition in A at P 1.1 discussed at some length above, in Section 6. One may well believe that it has been there from the beginning, though we should note that in Aristotle’s *Physics* the account of the elements and principles (Book I) comes before the definition of *physis* in the first chapter of Book II. Causes are treated *Phys.* 1.7, cf. A 1.11 and the Stoic *aitiologikon* to be discussed below, chance *Phys.* 2.4–5 cf. A 1.29, necessity

<sup>217</sup> Note that at Anaximander fr. B1 DK the words τε καὶ στοιχεῖον are replaced by dots. The idea that the Infinite is also the element to which things return in the end is not popular with scholars. Presumably Theophrastus echoes Aristotle’s formula ‘this they say is the element and principle of things’ (τοῦτο στοιχεῖον καὶ ταύτην ἀρχὴν φασιν εἶναι τῶν ὄντων) found in the famous description of the principle of the earliest philosophers *Met.* A 3.983b6–13.

<sup>218</sup> For further evidence of the distinction between principles and *realia*, starting with the *Timaeus* and reaching Alexander Polyhistor, Philo, and the Middle Platonists via the early Peripatos and Stoa see Part II, Spec. Rec. *Praef.*, sect. 5.

*Phys.* 2.9 cf. A 1.25–26, movement *Phys.* 3.1–3 and 8.5–10 cf. A 1.23, place (as we have seen above) *Phys.* 4.1–5 cf. A 1.19 and the Stoic *physikos logos*, the void (as we have also seen above) *Phys.* 4.6–9 cf. A 1.18 and the Stoic *physikos logos*, time *Phys.* 4.1–14 cf. A 1.21–22. For the divine, cf. the Stoic *physikos logos*, one may perhaps think of *Phys.* Book VIII, but should take into account that for Aristotle and Theophrastus theology lies beyond physics.<sup>219</sup> *On Coming-to-Be and Passing-Away* is the title of an Aristotelian treatise (the focus on this subject is in the first chapters of its first book) and also the heading of A 1.24. Varieties of mixture, of course also an important Stoic item, are treated *GC* 1.10 and A 1.17. Above we have attempted to explain the exclusion of necessity, chance, and the divine from physics as formulated in A at P 1.1.<sup>220</sup>

According to the overview in Diogenes Laërtius 7.132, the second division of the Stoic *physikos logos* is ‘generic’ (γενικῶς), and divided into three parts (τόπων).

The subparts of this second division of physical theory are (1) ‘on the cosmos’ (περὶ κόσμου), (2) ‘on the elements’ (περὶ τῶν στοιχείων), and (3) ‘causal explanation’ (αἰτιολογικόν). We suggest it is called ‘generic’ because its three *topoi* do not come under a genus as its species, but are, rather, parts of a whole. Jacques Brunschwig has convincingly argued that these generic topics are stated at a relatively ‘concrete level’.<sup>221</sup> Diogenes Laërtius does not separately discuss the sub-section ‘On the elements’, perhaps because the theme is treated by him in the context of the eidetic division of the Stoic *physikos logos*. That the elements are not treated separately in A Book II either may be no more than a remarkable coincidence.

However this may be, a number of sub-topics enclosed by the parts ‘on the cosmos’ and ‘causal explanation’ are listed in the next paragraph in Diogenes Laërtius, 7.132–133. Each of the two subparts ‘on the cosmos’ and ‘causal explanation’ is divided into two further sub-subparts. The account is concise, and limited to representative examples of issues.

In the part ‘on the cosmos’ some issues are said to be studied by both philosophers and scientists (μαθηματικοί, here astronomers), others by philosophers only.<sup>222</sup> ‘Studied (ζητοῦσι) by both are questions concerned

<sup>219</sup> See above, n. 144.

<sup>220</sup> Section 6.

<sup>221</sup> Brunschwig (2003) 206–208, cf. Long & Sedley (1987) 1:267–268.

<sup>222</sup> A variety of the distinction is at Ach ch. 2: the philosopher’s prerogative is the

with the fixed stars and the planets, e.g. whether (εἰ) the sun is as large as it looks (cf. 2.21\*),<sup>223</sup> and similarly whether (εἰ) the moon is (as large as it looks, cf. 2.26\*), and so also with the revolution of these heavenly bodies' (cf. 2.16\*), and with 'issues (ζητημάτων) similar to these'. Another inquiry pertains to questions studied (ζητεῖται) that are reserved for the physicists (τοῖς φυσικοῖς, not the early thinkers but philosophers dealing with themes in physics), viz. those pertaining to the substance of the cosmos (οὐσία, cf. 2.11\* on the heaven), to 'whether it is generated or ungenerated' (εἰ γενητός ἢ ἢ ἀγενητός, cf. 2.4\*, to 'whether it is ensouled or soulless' (εἰ ... ἢ ἄ-), cf. 2.3\*, to 'whether it is corruptible or incorruptible' (εἰ ... ἢ ἄ-), cf. again 2.4\*, particularly its heading, to 'whether (εἰ) it is administered by providence (cf. again 2.3\*), and similar (issues)'. We note that the issues studied by the (Stoic) philosophers only correspond to chapters in the first part, and even at the beginning, of A Book II, and those studied by both scientists and (Stoic) philosophers correspond to chapters much later in the same book. As to the phraseology it is clear that the formal pair εἰ ... ἢ plus negation is used interchangeably with εἰ alone. The latter formulation of a problem in Stoic physics corresponds exactly to that of a number of chapters in the *Placita*, e.g. 2.4\*, 'Whether the cosmos is incorruptible' (εἰ ἄφθαρτος ὁ κόσμος).<sup>224</sup>

In the aetiological department, some issues are said to be studied by philosophers as well as physicians, or by both philosophers and *mathēmatikoi* (including astronomers). In Diogenes Laërtius' exemplification, issues that are the special reserve of the philosophers have been left out, although it is not too difficult to imagine what these are. The topics of investigation shared between physicists and physicians (we again note

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inquiry into substance, e.g., what is the substance of the sun (examples cited by Ach comparable to lemmata at 2.26\*); the scientist looks at what follows upon the substance, e.g., from where and how eclipses occur. Ach 30.28–29 Maass ~ 9.8–9 Di Maria concludes 'for all their differences these disciplines are interwoven in the inquiries (ἐν ταῖς ζητήσεσιν), because the one needs the other'. For *zēlēseis* in the proem of A see above, Section 6, text to nn. 126–129, and for Aristotelian *zēlēseis* see below, Section 14 *ad fin.*

<sup>223</sup> Cf. the well-known Epicurean doctrine cited with the same formula A 2.21.5\*, the sun 'is as large as it looks, or a little larger or smaller'. See above, n. 127, and Part II, Spec. Rec. ch. 21, sect. 7.

<sup>224</sup> D.L. 7.133, 522.17–18 M. εἰ γενητός ἢ ἀγένητος [...] καὶ εἰ φθαρτός ἢ ἄφθαρτος is a look-alike of Arist. *Cael.* 1.10.279b5–6, ἀγένητος ἢ γενητός καὶ ἄφθαρτος ἢ φθαρτός. The Stoic use of an originally Aristotelian technique applied to the same issues unavoidably preserves traditional wording. For the formula 'whether ... or not' see also below, text to n. 356.

the words ζήτησις and ζητοῦσι) are exemplified by the inquiry about (περί) the ‘regent part’ of the soul (cf. A 4.5, which, even though we lack the evidence of S, includes the name-labels of three famous physicians, that is to say two in P and one more, Hippocrates, in T), about (περί) ‘what goes on in the soul’ (cf., presumably, the whole of A 4.8–12), and ‘about sperm’, περί σπερμάτων (cf. A 5.4–5, ‘Whether semen is a body’ and ‘Whether females ejaculate semen too’), ‘and (issues) similar to these’. So here the problems studied by both (Stoic) philosophers and physicians are paralleled by chapters in A Books IV and V. The phraseology is of the same bland περί + genitive type as the majority of the headings in the *Placita*. What is also important is that we have parallels in Stoic physics for the spermatological inquiries which take up a large part of A Book V, and that these are not restricted to the Varronian parallels in Censorinus listed by Diels *DG* 188–198.

It is moreover attested that Chrysippus in the first book of his *On the Soul* dealt with one of the issues mentioned by Diogenes Laërtius, viz. 7.133, ‘On the regent part’, discussed, as he says, by both philosophers and physicians. This verbatim fragment is of great interest for the earlier history of the *Placita* tradition, because it is clearly related to A 4.5, on the place of the regent part of the soul, also mentioned as an issue at D.L. 7.133, as we saw. Chrysippus ends his overview of tenets (largely corresponding to those in the *Placita* chapter but here anonymous, with the exception of Plato’s) with the remark that the place of the regent part ‘seems to elude us’—‘otherwise disagreement (ἀντιλογία) among physicians and philosophers would not have grown so great’. (Chrysippus does not accept this stalemate, and goes on to provide proof of its location in the heart). The term for disagreement used by him is the current word ἀντιλογία, not διαφωνία or the Platonic and Aristotelian term ἐναντιολογία, but it is clear that there is no difference in meaning; in fact, speaking of the contradictions or dissensus among doctors and philosophers as to the place of the regent part he twice uses the verb, διαφωνοῦσι, ‘they disagree’. Accordingly, Chrysippus is fully aware of one of the main characteristics of the presentation of tenets in the *Placita*.<sup>225</sup>

<sup>225</sup> See Ax (1986) 143, Mansfeld (1989b), (1990a) 3167–3177, Tieleman (1996) 7–11, 159. The fragment is at Gal. *PHP* 3.1.10–15 ~ *SVF* 2.885; tr. De Lacy; see also above, text to n. 216. On Chrysippus’ knowledge and use of skeptical methods of argument see evidence in Mansfeld (1990a) 3174–3176: e.g., a student of Arcesilaus and Lacydes and use of arguments for and against common experience according to Sotion fr. 22 Wehrli *ap.* D.L. 7.183 (~ *SVF* 2.1); use of Academic methods of argumentation discussed



What is more, Aristotle already acknowledged the coincidences between medicine and philosophy at the beginning and the end of the *Parva Naturalia*. In the first chapter of the *De Sensu*, 1.436a17–b1, he says that the physicist should ‘achieve a clear view of the primary principles of health and disease (περὶ ὑγείας καὶ νόσου)’, and adds that in fact those doctors who study their art more philosophically (i.e., more scientifically) start from natural philosophy, and most philosophers of nature end their exposition with a treatment of medical issues. This is repeated in other words in the final chapter of the *De Respiratione*, 27.480b23–30.<sup>226</sup> This view clearly anticipates that of the Stoics.

The topics of investigation that are justifiably claimed by the scientists as well as by the philosophers are exemplified by the issue ‘How we see’ (cf. A 4.13) and the related issue ‘what is the cause of the appearance in the mirror’ (cf. the next chapter, A 4.14).<sup>227</sup> Further topics shared with the *mathēmatikoi* are ‘How clouds come to be, and thunder and rainbows and halo and comets and the like’, cf. A 3.4 ‘On clouds’ etc., 3.3 ‘On thunder’ etc., 3.5 ‘On the rainbow’, 3.18 ‘On the halo’, and 3.2, ‘On comets’ etc. These Stoic parallels suggest that some chapter headings in the *Placita* beginning with πῶς are about causes. And we note that the problems studied by both (Stoic) philosophers and scientists are paralleled by chapters in A Books IV and III.

It is clear that the themes which are listed by Diogenes Laërtius in fact cover, roughly, the *whole* of the field dealt with in *A Books II to V*: astronomy, meteorology, psychology, (human) biology, spermatology, medicine, treated alternately both from the point of view of the philosophers and of the scientists. Though more selective, this list is far more complete than Seneca’s summary account of the *omnis de universo quaestio* at *Nat.* 2.1 (above, Section 5). The summary and to some extent disorderly exposition of these subjects at D.L. 7.134–159 does not closely follow the pattern set out at the beginning, though the rough sequence of main sections, viz. the successive treatment of principles and methodologically important subjects (7.134–141)<sup>228</sup>—

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Plu. *SR* 1036C (~ *SIF* 2.109), 1037B (~ *SIF* 2.128), where verbatim quotation from the *Physikai Theseis* is found (for the title cf. below, n. 334 *ad fin.*). For ἐναντιολογία cf. above, n. 10.

<sup>226</sup> See Mansfeld (1990a) 3058–3060, Lennox (2005) 66–68, and above, text to n. 71, below, text to n. 319.

<sup>227</sup> These two chapters will be discussed at some length in Section 16 below. Cf. also below, text to nn. 306, 379.

<sup>228</sup> Also at D.L. 7.147–151.

cosmology (7.142–146)<sup>229</sup>—meteorology (7.151–154)—psychology (7.156–158)—spermatology (7.158–159), agrees with what is proclaimed at 7.132–133, and with the order of the main themes in A. Note that Diogenes’ account of the psychology and spermatology is extremely concise, not only compared with what is in A Books IV and V, but also with his own treatment of the Stoic principles etc., cosmology, and meteorology.

Just as the overlap between philosophy and medicine, the demarcation between physics and mathematics (esp. astronomy) as well as the communality of interest between philosophers and *mathêmatikoi* were already placed on the agenda by Aristotle, *Phys.* 2.2.193b22–35, whose stance once again anticipates that of the Stoics.<sup>230</sup> Natural bodies have surfaces etc., which are the objects of mathematical study. It is ‘the task of the physicist to know the *ti esti*, or essence/substance, of the sun or moon’ (τοῦ φυσικοῦ τὸ τί ἐστίν ἥλιος ἢ σελήνη εἰδέναι), but it would be odd if he were to avoid their essential attributes, ‘especially because the (earlier) physicists have spoken of the shape of the sun and of the moon, and (inquired) whether the earth and the universe are spherical (σφαιροειδής) or not’.<sup>231</sup> But mathematicians do not study these formal properties *qua* properties of physical bodies, but after abstraction (i.e., they leave out the corporeal ingredients). At *Cael.* 2.10 Aristotle prefers to leave the study of the order and relative position of the heavenly bodies to the astronomers, thus refraining from investigating these bodies according to the categories of place and *pros ti* (a theme of A 2.15\*). In the next chapter (*Cael.* 2.11) he briefly refers to astronomy for a proof concerning the shape (category of quality) of the heavenly bodies derived from studying the sun in eclipse. On the other hand, evidence from eclipses (categories of doing and being-affected), obser-

<sup>229</sup> Also at D.L. 7.155.

<sup>230</sup> Also cf. e.g. Arist. *An.* 1.1 403b9–16. The famous Geminus abstract from Posidonius (see above, n. 200, below, nn. 378, 387) is quoted in the commentary on this *Physics* passage by Simplicius, who twice points out that Posidonius’ starting-points are in Aristotle.

<sup>231</sup> Views of pre-Aristotelian physicists on these issues can of course be amply illustrated from A and similar sources (and in the case of the earth from Aristotle himself, *Cael.* 2.13, see Mansfeld (1992a) 94–98). On the shape of the sun cf. 2.22\* (chapter heading περὶ σχήματος ἡλίου); on the shape of the moon 2.27\* (the chapter heading περὶ σχήματος σελήνης repeats Aristotle’s formula); on the sphericity or not of the earth 3.10 (P 3.10.1, σφαιροειδῆ τὴν γῆν), on that of the cosmos 2.2\* (2.2.1\*, σφαιροειδῆ τὸν κόσμον). It may be an accident of transmission that in these *Placita* chapters no name-labels of astronomers are extant.

variations of the stars, and the astronomical computation of the earth's circumference at *Cael.* 2.14.297b23–298b3 are used as additional proof for its sphericity. For his definite views on the substance of the stars see of course *Cael.* 2.9, on the spherical shape, i.e., quality of the heavens and the cosmos, *Cael.* 2.4, on that of the heavenly bodies *Cael.* 2.8, of the moon and the others *Cael.* 2.11, and on the shape and immobility of the earth *Cael.* 2.14.

We may return to Diogenes Laërtius, whose account of the Stoic *physikos logos*, as we saw, runs parallel to large sections of the *Placita*. There is no need to worry about the fact that in Diogenes' enumeration of aetiological issues and meteorological themes treated in A Book III come after problems concerned with sight treated in A Book IV. There is no need for worry either about the difference between Diogenes Laërtius' and A's sequence of meteorological phenomena. As already pointed out, such lists are meant to inform in a preliminary way. They are by no means to be seen as tables of contents in our sense of the expression.

Thus, Diogenes' brief overview of the demarcations as well as of the amount of overlap between the various disciplines and their practitioners throws quite some light on the presence of astronomers and physicians in the *Placita*, though we doubt whether the Stoics were the first to bring them in. Aristotle, we have seen, already dwells on the inquiries pursued by physicists as well as mathematicians and doctors. That the communality of interest between philosophers and physicians is not a later development in Stoicism either (e.g. not due to the initiative of Posidonius) is proved by the verbatim fragment of Chrysippus cited above, where he speaks of the disagreement concerning the location of the regent part among these experts and explicitly mentions both groups.<sup>232</sup>

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<sup>232</sup> Above, text to n. 225.

## 9. *Where Do We Put the Earth?* *Aëtius, Seneca, Lucretius, and Hippolytus*

*Summary.* Questions relating to the earth are found at 3.9–15, which are extant in ps.Plutarch only. We summarize the argument of an earlier paper that these chapters are *grosso modo* dependent on Aristotle, *On the Heavens* 2.13, and analyze them one by one. Ch. 3.15, on earthquakes, is paralleled in the *Meteorology*. The location of the treatment of the earth is not uniform in the tradition. In the *Placita* its substance, location in the cosmos, and further attributes (including its movements during earthquakes) are found together after the meteorological part of the treatise. But Seneca argues that in physics one should speak of the earth in three different contexts: its location in the cosmos belongs in the context of the presentation of the heavenly bodies (found in Book II of the *Placita*), earthquakes are to be discussed in the context of meteorology (as in Aristotle), and the earth's further attributes, such as its shape, follow in a final position elsewhere. A third possibility for placing this discussion is near the beginning of the cosmology, viz. in the cosmogony. The cosmogonical account found at 1.4, for instance, briefly refers to the substance and location of the earth. Parallels for this placement can be found among Aristotle's references, and also in Book I of Hippolytus' *Refutatio*. (Diels believed that the Hippolytan order of subjects goes back directly to Theophrastus, but his analysis is flawed. Theology does not come second in Hippolytus, although it does do so in the *Placita*.)

Chapters 9–15 of A Book III are about the earth, 16–17 about the sea. The chapters on the earth, which concern us in the present Section, are lost for S, with the exception of parts of chapter headings and the lemma S 1.36.1 ~ P 3.15.10. We should therefore keep in mind that as to method we are dealing with P's understanding of A, but have noticed that P strives to preserve the main divisions and oppositions characteristic of A's presentation.

The influence on A 3.10–14 of Aristotle's chapter on the earth in *On the Heavens* 2.13, in which the views of others are thoroughly scrutinized, is clear. *Grosso modo* we find the same diaereses and the same views, that is to say the same forms of arrangement as well as the same, or similar, contents. Aristotle deals with the position of the earth—category of place A 3.11, cf. *Cael.* 2.13.293b15–16, 'on the place of the earth some have this opinion' (περὶ μὲν οὖν τοῦ τόπου τῆς γῆς

ταύτην ἔχουσί τινες τὴν δόξαν), and the summing-up at the end of the chapter, 296a21–23, where not only shape and motion versus rest but also place are said to have been dealt with. He further deals with the question of whether or not it moves (cf. 3.13)—category of place again; with its shape—category of quality (cf. 3.10); with the question of how many earths there are—category of quantity (cf. P 3.9.1–2); and with views about the coming to be of the earth (which involve its substance, another category) as given at *Cael.* 2.13.295a7–24, cf. P 3.9.4b–5. Aristotle shows in what way these issues are, or can be, interrelated, e.g. the earth may be believed to be at rest because of its shape, or at the centre because this is where it came to be at the time of the cosmogony.<sup>233</sup>

Fortunately we are able to adduce Aristotle's account, for apart from the lemma S 1.36.1, as we noted above, and the headings of chs. 3.9, 3.10, 3.11, 3.13, and 3.15, the parallel Aëtian tradition in S for the chapters on the earth is lost. The transmission of the chapters in P moreover leaves much to be desired. As to the further tradition, we may add the parallels found in a number of authors to the file, from Cicero via Lucretius, Seneca, and Cleomedes to Martianus Capella.<sup>234</sup>

In P parts of the lemmata 3.10.2<sup>235</sup> and 3.14.1 are lost, and the remnant of 3.14.1 is the only extant part of the chapter. The lemma 3.11.4 is the final one in the chapter 'On the position of the earth' where it presumably does not belong; as Beck and Diels<sup>236</sup> have seen, it should have been part of the now sadly mutilated ch. 3.14, 'On the division of the earth' in zones. Perhaps the text of A was already corrupt at this point, but the corruption may also have occurred in the tradition of P. The wrong placing of the lemma can perhaps be explained as a case of verbal association which shows the epitomator at his work: the Philolaus lemma at P 3.11.3 mentions the 'inhabited earth' (τὴν οἰκουμένην γῆν), and the Parmenides lemma attached at the end of the chapter as P 3.11.4 speaks of the 'inhabited places of the earth' (τῆς γῆς τοὺς οἰκουμένους τόπους).

<sup>233</sup> For the relation of the Aëtian chapters on the quantity, quality, and place of the earth to Arist. *Cael.* 2.13 (and Cic. *Luc.* 123) see detailed discussion Mansfeld (1992a) 94–109. For the antecedents in Plato's *Phaedo* (discussion of shape plus position 97d–e, 99b, 108d–109a) see Mansfeld (2000a) 10–14.

<sup>234</sup> Cf. below, n. 241.

<sup>235</sup> Lost words preserved in Q's translation.

<sup>236</sup> *DG* 62.

The sequence of topics in the chapters on the earth follows the pattern according to which the chapter series on the heaven, the stars, the sun, and the moon in Book II, and the soul in Book IV, have been arranged, viz. the categories of, among others, substance, quantity, quality, place (for which in the case of the earth there is ample precedent in Aristotle, as we have seen), then functions and attributes of substances (ἔργα καὶ πάθη) for which one may think of categories such as having, doing, being-affected, and being in a position.<sup>237</sup> This order is a bit different in the first chapter on the earth, P 3.9, because substance is not treated first. The heading in P according to Eusebius and G puritanically followed by Diels in the *DG* is the simple ‘On the earth’, whereas the mss. of P followed by Mau and Lachenaud have ‘On the earth and what is its substance and how many (there are)’. According to Photius’ index for S it is ‘On the earth, whether it is one and limited and of what sort of size’. The problem of the original form of headings in A needs to be discussed separately.<sup>238</sup> Here we may note that the longer of these headings, at any rate, correctly indicate the plurality of topics at issue in the five terse lemmata of this brief chapter. The only topic not found, an important one, is that concerning the ‘sort of size’ intimated in S’s heading; it will have been abridged away by P, as Diels *DG* 62 noticed (the theme is discussed at considerable length e.g. in Cleomedes *Meteora* 1.6). Perhaps however the reference to the small size of the Democritean earth during the first phase of the cosmogony in another chapter (3.13.4) is a stray remnant of this notion.

The first category at issue this time is not substance but quantity (according to number): the first two lemmata of 3.9 oppose the view of ‘Thales and those from (ἀπό) him’, who hold that there is one earth, to that of Hicetas the Pythagorean who said there are two: ‘this one’,<sup>239</sup> that is to say our earth, and the so-called counter-earth. In Aristotle’s *On the Heavens* chapter this cosmology is not attributed to individuals, but, as is his habit, to the ‘Pythagoreans’. This diacresis, one opposed to two, like those to follow in the chapter, clearly turns into a diaphonia: there is no gliding scale, or list, because the alternative positions strictly exclude each other. The next one-and-half lemmata oppose the view of the Stoics, who said there is one finite earth, to

<sup>237</sup> Above, n. 2 and text thereto, text to n. 101, below, text after n. 342.

<sup>238</sup> See below, Section 17.

<sup>239</sup> Ταύτην—one imagines someone pointing at or thinking of an orrery, or an illustration.

that of Xenophanes, who said that ‘from its nether part it is rooted to infinity’ (ἐκ τοῦ κατωτέρου μέρους εἰς ἄπειρον ἐρριζώσθαι). This is the sub-category of quantity according to size. The second half of this fourth lemma on Xenophanes’ earth is about the category of substance: ‘it has been compacted from air and fire’. Perhaps the author of an earlier source hypothesized that not the earth itself but these ‘roots’ are made of air and fire, so that the earthen part of earth, so to speak, is made to rest on the lighter elements (compare those who according to P 3.15.8–9 posit that the earth rests upon air, or water). But P (or even A) seems to believe that according to Xenophanes the earth itself is a compound of air and fire.<sup>240</sup> The fifth and last lemma is a tenet with name-label Metrodorus, who posits that the earth is ‘sediment and dregs of water’ [so not derived from air and fire], and ‘the sun’ [not the earth] ‘of fire’. This amounts to the exact opposite of the Xenophanes lemma, so these two lemmata together constitute a typically doxographical diaphonia. The sun has no business in this chapter apart from sustaining this diaphonia. The two lemmata also include a reminiscence of cosmogony, which as we shall see is not without some interest.

Ch. 3.10, with its extremely brief lemmata, is about the shape of the earth; its heading rhymes with those of 2.2\*, on shape(s) of the cosmos, 2.14\*, on shapes of the stars, 2.22\*, on shape(s) of the sun, and 2.27\*, on shape(s) of the moon. Various shapes are listed for the earth on a gliding scale: i.e. a diaeresis.<sup>241</sup> Very interesting is a rare word that occurs only here and in Aristotle’s chapter (as well as in Simplicius’ comment on the *On the Heavens* passage): τυμπανοειδής, Arist. *Cael.* 2.13.293b33–294a1 ~ A 3.10.4. This is further proof of lineage and ultimate depen-

<sup>240</sup> Leshner (1992) 144–145 on Xenophanes fr. A47 DK takes this to apply to ‘the earth below’, i.e. the earth’s depths, but this ignores the preposition ἐκ. He argues that fire according to Xenophanes derives from moist vapours (boldly referring to Xenophanes fr. A40 DK ~ 2.20.5\* in the version of S printed in DK), so underground moisture in the earth’s depths would be meant. This ingenious attempt becomes superfluous when one takes the microcontext in the *Placita* chapter into account. Simp. in *Cael.* 522.5–10 fails to provide help; he says he has not read Xenophanes’ lines on the matter, and suggests two alternative interpretations for what Arist. *Cael.* 2.13.294a21 calls τὰ κάτω τῆς γῆς (a phrase meaning either ‘the nether part of the earth’ or ‘what is underneath the earth’), viz. either the nether part of the earth or the space and infinite aether underneath the earth.

<sup>241</sup> For parallels and more shapes see passages cited Mansfeld (1992a) 104–106 n. 155, to which add Basil *Hex.* 9.1; *ibid.* 104 it is also pointed out that the main diaeresis is between spherical and flat, derived from Arist. *Cael.* 2.13.293b33.

dence. That the earth has the ‘shape of a tambourine’ is an anonymous view in Aristotle, while the briefest of possible lemmata in A attributes it to Leucippus. This is confirmed by Diogenes Laërtius on Leucippus, ch. 9.30, where the best mss. read the virtually equivalent word *τυμπανῶδες*. We observe that the knowledge of the name-label possessed by these later sources does not depend on what is in Aristotle.

P 3.11.1–3, on the position of the earth, presents two diaphonias. The first and third lemmata contrast the view of ‘those from (ἀπό) Thales’ (cf. P 3.9.1), who put the earth in the middle, with that of ‘Philolaus the Pythagorean’, who put fire in the middle, the counter-earth second, and the inhabited earth third.<sup>242</sup> This view squares with that which is attributed to ‘Hicetas the Pythagorean’ at P 3.9.2, who said there were two earths. So a listing according to number, i.e., according to the category of quantity. Maybe Hicetas at 3.9.2 is a mistake for Philolaus, for Hicetas is mentioned in a similar context but for a very different cosmological theory at Cicero *Lucullus* 123, who appeals to the authority of Theophrastus;<sup>243</sup> at P 3.13.3 this cosmology is attributed to another Pythagorean again, Ecphantus, see below. And the second lemma of P 3.11 is opposed to the third because Xenophanes is said to have put the earth ‘first’, *πρώτην*, while Philolaus put it third, as we have seen. Here both the category of relation and that of quantity (because of the ordinal numbers) seem to be involved. Also note that at P 3.11.2 part of the lemma P 3.9.4, viz. ‘it is rooted towards infinity’, is repeated: this formula does double service. On the final lemma, which as to its theme belongs with ch. P 3.14, see above.

The brief ch. P 3.12, ‘On the inclination of the earth’, is a sort of appendix to 3.11, because the inclination is an aspect of the position of the earth in the cosmos (compare 2.8\*, ‘What is the cause of the cosmos having been tilted?’, following immediately after 2.7\*, ‘On the order of the cosmos’, with its penultimate lemma on the cosmology of Philolaus, 2.7.6\*). Inclination comes under the category of being-in-a-certain-position (*ξεῖσθαι*), like Aristotle’s well known ‘sitting’ and ‘standing’. There are lemmata, not unsubstantial, with the name-labels Leucippus and Democritus. These tenets will have been cited and preserved because of their somewhat peculiar nature. Note moreover that ch. P 3.12 is a counterpart of ch. 2.8\*, just referred to. The

<sup>242</sup> Cf. detailed account at A 2.7.6\*.

<sup>243</sup> Thphr. fr. 240 FHS&G ~ *Phys.Op.* fr. 18 Diels. On this passage see Mansfeld (1992a) 99–104.



mechanism causing the inclination of the cosmos at 2.8.2\* is similar to those depicted in P 3.12. Aristotle does not discuss the topic, but a remark in Plato shows that it was on the agenda of the early physicists. Plato's rejection of the earth's inclination, we note, is not mentioned in 3.12, though it would have provided a perfect diaphonic contrast with the views of Leucippus and Democritus that are listed. It is not to be excluded that in S, now lost, Plato's view was mentioned, for it is briefly included at P 3.15.10 ~ S 1.36.1.<sup>244</sup>

P 3.13, heading 'On the movement of the earth', or 'Whether the earth is at rest or moves' (as at S 1.35) again presents a complicated diaphonia; for the theme cf. 2.16\*, on the movement of the heavenly bodies. This is about motion in the category of place, and the categories of doing and being-affected are also involved. The general view attributed to 'the others' (a qualification immediately hinting at the diaphonic opposition) briefly cited in the first lemma is that the earth is at rest. In contrast to this, three other views, on a sort of gliding scale, are opposed in the next lemmata. At P 3.13.2 we have Philolaus the Pythagorean again, who has 'the earth move around the fire in an oblique circle in the same way as sun and moon'; this is consistent with P 3.11.3. Also note that the 'others' and Philolaus are contrasted by means of the particles μέν and δέ. Next, at P 3.13.3, we have Heraclides of Pontus and Ecphantus the Pythagorean, who make the earth move not by changing its place, but about 'its own centre' from West to East. These two names are not an innovation of A, but depend on the tradition, and so does the tenet.<sup>245</sup> Finally, at P 3.13.4, Democritus is cited for the view that in the beginning the earth wandered about because of its smallness and lightness, but that, becoming solid and heavy as time went on, it came to a halt. The main diaeresis of motion is therefore movement in a circle opposed to wandering, and movement in a circle is subdivided into that in a bigger and that in a smaller circle. The Democritus lemma refers to cosmogony, and we have seen above that a precedent for such a reference is found in Aristotle's chapter on the earth in the *On the Heavens*.<sup>246</sup>

<sup>244</sup> For Plato on this issue see *Phd.* 109a; for P 3.15.10 ~ S 1.36.1 see below, text to n.

<sup>245</sup>

<sup>245</sup> In this context Ecphantus is mentioned Cic. *Luc.* 123, and Heraclides Simp. in *Cael.* 444.32–45.2, 519.9–11, and 541.27–30 ~ fr. 108, 106, 107 Wehrli. See Mansfeld (1992a) 100–102.

<sup>246</sup> Cf. above, text before n. 234.

Phrases in other chapters of A may well be related to lemmata left out by P at 3.13. At 2.24.7\*, in the chapter on the eclipse of the sun, we are told that Aristarchus ‘moves the earth in a circle around the sun’. At P 3.17.5 ~ S 1.38.9 (fuller version), in the chapter on ebb and flow, we hear about ‘Seleucus the astronomer who wrote against Crates and who moved the earth too’. Crates’ view on the tides is in the lemma S 1.38.7, not paralleled in P 3.17. The reference to this discussion therefore is extant in S only, for P has deleted the Crates lemma and consistently removed the words ‘who wrote against Crates’ from the Seleucus lemma; however, he preserved the phrase ‘who, too, moved the earth’. An interesting aspect is that, however much Seleucus might have differed from Crates with regard to the explanation of the tides, the main bone of contention as revealed precisely by the phrase ‘who, too, moved the earth’ (κινῶν καὶ τὸς τὴν γῆν) was the movement of the earth, with Seleucus defending the heliocentric position of Aristarchus against the geocentric position of Crates and the majority. No other earthmover is mentioned in the chapter. It has been supposed that a reference to Aristarchus has dropped out or was the victim of abridgement here, but this is not necessary, for this time we have both P and S for the heliocentric view. And the macrocontext offers help: at 2.24.7\*, cited a moment ago, Aristarchus’ heliocentric view (note the similar formula τὴν δὲ γῆν κινεῖ) is tucked away in the lemma concerning his explanation of the eclipse of the sun.<sup>247</sup>

One cannot say much about the mutilated chapter P 3.14, ‘On the division of earth’, even if one adds P 3.11.4. At P 3.14.1 (incomplete lemma), ‘Pythagoras’ divides the earth into 5 zones, and mentions at least one inhabited zone; ‘Parmenides’ at P 3.11.4 speaks of two inhabited zones. The theme and heading of the chapter are analogous to those of ch. 2.12\* (‘On the division of the heavens’ into five circular

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<sup>247</sup> The Aëtian text is Crates fr. 7 Mette ~ fr. 136 Broggiato; see commentary at Broggiato (2001) 285–286. Russo (1995) 148–151 is unable to explain the qualification of Seleucus as ‘who, too, moved the earth’ because he fails to consider the wider *Placita* context, viz. 2.24.7\* and A 3.13 ‘On the motion of the earth’, where perhaps the views of Aristarchus and Seleucus were epitomized away by P (our only source for this chapter), and only Heraclides of Pontus and Ecphantus the Pythagorean move the earth, though not around the sun but about its axis. For Cleanthes against Aristarchus see Plu. *Fac.* 923A ~ *SVF* 1.500. For Aristarchus and Seleucus (in the context of the interpretation of the earth’s motion (or not) at Plato *Ti.* 40b–c) see Plu. *Quaest. Plat.* 8.1006c, and for such doxographically inspired reverberations cf. further Mansfeld (1992a) 99–102, 107–108. For quotation of passages and discussion see also Heath (1913) 305–308.

bands, 'which they call zones'). The theme of the division of the earth into zones became a standard topic, as is clear from, e.g., the account at Ach ch. 29, heading 'On zones, and that they are five'. Achilles states explicitly that there are zones both in the heavens and on the earth, the latter being vertically underneath the former, and also mentions two inhabited zones.

P 3.15, 'On earthquakes', with eleven lemmata, is quite long even in P's epitome (in S, as noted above, of this chapter only the lemma at 1.36.1 is preserved). Earthquakes are a fascinating subject; think of their treatment in Seneca's *Naturales Quaestiones* Book VI. Precedent in Aristotle is not found in the *On the Heavens*, but in another treatise, the *Meteorology*, 2.7–8, where there are two chapters dealing with earthquakes, announced as 'after this we must speak of the trembling and movement of the earth', a quasi-heading not far from the chapter heading in A.<sup>248</sup> Aristotle demonstrates that he finds this topic particularly worthy of note by beginning not just with the comment that there have been three main explanations, deriving from three authorities, but by emphasizing its importance by introducing these persons with name plus ethnicon,<sup>249</sup> and by including their relative dates: 'Anaxagoras of Clazomenae and before this Anaximenes of Miletus expressed their view, and later than these Democritus of Abdera'. The same three name-labels (with Thales added to Democritus)<sup>250</sup> are found at the beginning of the chapter in A, though in a different and diaeretic order; a tenet with the name-label Stoics, where the unusual *oratio recta* after φασι is noteworthy, has so to speak been interpolated at P 3.15.2.

Earthquakes are also treated in the final chapter of the extant excerpts of Theophrastus' *Metarsiology*, ch. 15 Daiber, that is to say after

<sup>248</sup> Noteworthy verbal echoes of *Mete.* 2.7.365b1–4 (on Democritus) in A at P 3.15.1 (name-labels Thales and Democritus), and of 365b8–10 (on Anaximenes) at P 3.15.3 (name-label Anaximenes). *Ad sententiam* the same *Mete.* 2.7.365a19–23 (on Anaxagoras) and P 3.15.4 (name-label Anaxagoras). Parallels individually listed Lachenaud (1993) *ad locc.*

<sup>249</sup> Perhaps this means that he had their writings in mind: think of the standard beginning of early books. In the sequel he discusses the views of Anaxagoras, Democritus, and Anaximenes in that order, so the note on the relative chronology may be meant to show that he knew it.

<sup>250</sup> A version of the tenet is also attributed to Thales Sen. *Nat.* 3.14.1, is thus part of the tradition. Aristotle ascribes to Thales the earth's floating on water (*Cael.* 2.13.294a28–31, i.e. in the chapter on the earth; *Met.* A 3.983b20–22) but does not mention his explanation of earthquakes.

the meteorological phenomena, from thunder (ch. 1) to the halo round the moon (ch. 14).<sup>251</sup>

Detailed study of the parallels (in e.g. Seneca's *Naturales Quaestiones* or [Aristotle] *De Mundo*) and antecedents of the material in A 3.15 must be postponed until another occasion. What can be pointed out here is that this chapter, like some others in A, addresses several issues simultaneously. To say 'the earth moves' can mean, in Greek as well as English and in A as well as in Aristotle, both that the earth moves around its axis, or around a central fire, and that the earth trembles, as during an earthquake.<sup>252</sup> This helps explain why lemmata are found in this chapter dealing not only with earthquakes, but also with the issue as to whether or not the earth moves at all, which is the specific topic of ch. 3.13. Lemmata P 3.15.1 to 3.15.5 and P 3.15.11 are about earthquakes. Lemmata P 3.15.6 to 15.10 (~ S 1.36.1) are about, firstly, the issue of the movement or rest of the earth from a cosmological point of view as in P 3.13, and secondly about the movement of (a part of) the earth when earthquakes occur, though this second ingredient is not expressed at P 3.15.8.<sup>253</sup> In lemma 3.15.8, a tenet concerning the earth's rest which forms an alternative to that stated in the next lemma (P 3.15.9), there is no reference to earthquakes at all. In itself it could equally well have been placed in P 3.13, though its microcontext in the present chapter intimates another applicability. P 3.15.10 ~ S 1.36.1 begins by stating that according to Plato there are six directions of motion<sup>254</sup> and that the earth cannot move according to any of them, as it lies lowest from all directions and remains unmoved, having no preference to incline one way or the other (εἰς τὸ ῥέψαι μᾶλλον).<sup>255</sup> This is an appeal to the principle of sufficient reason.<sup>256</sup> We recall that Plato's

<sup>251</sup> Cf. above, text to n. 75. On *Metars.* ch. 15 see the commentary of Daiber (1992) 281–282.

<sup>252</sup> If earthquakes are not excluded at *APb.* 2.1.89b30–31, the suggestion at Mansfeld (1992a) 71 with n. 31 is only partly right.

<sup>253</sup> Noticed Lachenaud (1993) 271 n. 6.

<sup>254</sup> In the reconstructed chapter 'On motion' five views of motion are listed in an ascending series according to number (from one to five species): S 1.19.1 p. 162.6–11 from one to five (four has disappeared in a lacuna), only one and two at P 1.23.3–4 (~ S 1.19.1). The six species attributed to Plato at P 3.15.10 ~ S 1.36.1 (going back to *Ti.* 43b) may have been mentioned in a predecessor of this chapter.

<sup>255</sup> A peculiar combination of items going back to *Ti.* 34a and 43b with *Phd.* 109a, both echoed quite accurately (for *Phd.* 109a cf. also above, n. 244).

<sup>256</sup> Also at issue, and a bit more clearly, at P 3.15.7, 'Parmenides Democritus: because it is equidistant on all sides it remains in equipoise having no cause to incline hither rather than thither'.

view of the inclination of the earth, or rather the lack of it, cited here, does not appear in the thematic chapter P 3.12 discussed above.

The fact that the theme of several lemmata of the final chapter on the earth, 3.15, coincides with that of ch. 3.13, on the earth's motion or rest, shows that these two chapters are connected by a strong link. Ch. 15 is a sort of sequel to ch. 13. Earthquakes are taken to be movements of the earth on a smaller scale than movements of the whole earth, of which, as we have seen, the movement about the centre is less big than that about a central fire. The latter movements are circular, which earthquakes are not. The diaereses, spread over two chapters, pertain on the one hand to the gradations in size of these movements on a gliding scale from greatest to smallest, and on the other to circular movement as opposed to non-circular. When we consider chs. 3.13–15 from this angle, ch. 14, on the division of the earth in zones, looks like an afterthought. These zones are circular strips, or layers, on a sphere (cf. 2.12.1\*). Individually these relate to parts of the earth, but as a set they relate to the earth as a whole, which is why this chapter is placed before that on the earthquakes: earthquakes only hit parts of the earth. The mental linking of circular zones with circular movement helps perhaps to explain further why ch. 3.14 is found in its present position, i.e. by association.

The proem of Book III has been discussed above, in Section 4. We recall that A, announcing his discussion of meteorological and terrestrial phenomena, says ‘they’, i.e., the philosophers and scientists, ‘were convinced’ that the earth is situated at the centre of the cosmos, omitting to mention the exception, viz. the doctrine of Philolaus described in P 3.11.3 or attributed to Hicetas in P 3.9.2. In the present Section we have seen that in Aristotle the location of the earth and the issue of its rest or movement belong with cosmology, but the earthquakes with meteorology. Treatment of these subjects together and in succession, as in A, is therefore in no way self-evident, or merely tralaticious. In the *Placita* the order of the *descensus* through the elements is followed, although the sea comes after the earth. The second part of the proem to Seneca’s *Naturales Quaestiones* Book II,<sup>257</sup> a little dialogue with the addressee of the treatise, demonstrates that a different distribution is also feasible.

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<sup>257</sup> For the first part see above, Section 5 *ad fin.*

This person, serving as a foil, asks: ‘Why have you put the study of earthquakes in the section where you are to speak of thunder and lightning?’ Seneca explains that earthquakes are caused by air, and so have to be studied together with other phenomena associated with the region of air. He continues:<sup>258</sup>

I will say something that will seem even more surprising: in the section on *caelestia* (things in the heavens) it will be necessary to talk about the earth as well. ‘Why?’ you ask.

Because when we examine in their own section the properties of the earth, whether it is flat, unsymmetrical, and irregularly elongated, or resembles exactly the shape of a ball and organizes its parts into a globe [cf. P 3.10];

whether it confines the waters or is confined by them,

whether it is a living being or an inert mass,<sup>259</sup> full of air but not its own breath;

and other questions of this sort, whenever they come to hand

—all these come with earth and will be placed lowest (*in imo*).

But when we investigate what the position of the earth is, in what part of the cosmos it has settled [cf. P 3.11], how it is situated in respect to the stars and the heaven [cf. 2.31\*]—such an inquiry will belong to the higher phenomena (*superioribus*) and so to speak attain a better status.<sup>260</sup>

Accordingly, the topic of the location of the earth (Seneca’s ‘in what part of the cosmos it has settled’, *consederit*),<sup>261</sup> at issue in P 3.9, is assigned by Seneca to a place in a section of natural philosophy, viz. the part about the *caelestia*, he fails to deal with. This position corresponds *de iure* to a location in A Book II, e.g., after the chapters on the moon. We may also think of a quasi-lemmatic representation in something corresponding to 2.31\*, the chapter dealing with the relative distances (perhaps the category of *pros ti*, but the heading in some mss. of P is concerned with the πόσον) between the heaven, the sun, the moon, and the earth, for the topic of these distances seems to be implied by Seneca’s ‘how it is situated in respect to the stars and the

<sup>258</sup> *Nat. Quaest.* 2.1.4–5.

<sup>259</sup> Cf. A 1. *Praef.* on the sun; no parallel in Book II except 2.3\*.

<sup>260</sup> Tr. Corcoran, slightly modified.

<sup>261</sup> One is reminded of Democritus’ earth settling (presumably at the centre) at P 3.13.4, above, text to n. 246, or the anonymous cosmogonical theories mentioned by Aristotle mentioned above, text before n. 234.

sky'. For such treatment of this part of the theoretical inquiry about the earth in a cosmological context there is precedent, as we have seen, in Aristotle, viz. *On the Heavens* 2.13,<sup>262</sup> just as there is precedent for Seneca's treatment of earthquakes in a meteorological context in Aristotle: *Meteorology* 2.7–8 and Theophrastus, *Metarsiology* ch. 15. But here the parallels end. Seneca, in fact, wants to distribute the treatment of the earth over the main parts of physics: its location in the cosmos and its relation to the other heavenly bodies is to be dealt with among the *caelestia*, earthquakes belong with the *sublimia*, while the earth's shape and similar questions are to be treated together with the lowly *terrena*.

It is not so easy to decide whether these differences of arrangement amount to a peculiarity of the strand of the doxographical tradition to which A belongs, or one of (the tradition used by) Seneca. Seneca's main purpose in this backward-looking proem<sup>263</sup> to Book II (which in fact is the last book of his treatise) seems to be a justification of his treatment of earthquakes among the *sublimia*. What is more important is that both parties, if the use of this word be permitted, were in a position to appeal to antecedent in Aristotle. A deviates from the Aristotelian distribution just like Seneca does, but in a different way. His discussion of the treatment of the earth from a cosmological, terrestrial, and meteorological point of view in a series of consecutive paragraphs following the treatment of the phenomena between heaven and earth represents a reordering of the material—a choice which, as it would seem, simplifies matters for pedagogical reasons. The difficulties which the scholarly interpretation of Seneca's intentions has been forced to struggle with show that the progress of the latter's narrative is far from simple—even when the correct book order has been restored.

Seneca's order, moreover, is to some extent anticipated by Lucretius (an author he knew well). Lucretius discusses the place of the earth at the centre of the cosmos in the context of the cosmogony in his fifth book (5.534–538), and the meteorology including earthquakes in the next (earthquakes at some length, 6.535–600), followed by *inter alia* sea (6.608–638), Etna (6.639–711), Nile (6.712–737), the Avernian lake, and

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<sup>262</sup> Cleomedes *Meteora* 1.5 Todd too discusses the place of the earth in a cosmological context, but note that he begins the chapter with a longish discussion of (the views concerned with) its shape, which Seneca wants to treat elsewhere.

<sup>263</sup> See Codoñer (1989) 1797, who argues that the proem justifies the heterogeneity of the treatise.

springs and wells.<sup>264</sup> So Lucretius, here differing from A's order, has the same sort of separation between the treatment of the place of the earth and the explanation of earthquakes as the one promoted by Seneca, but agrees with A in treating the liquid element, present on and in the earth, after the section on earthquakes. We must also acknowledge that in Lucretius' cosmology (as in the anonymous cosmogony in A at P 1.4, see below) the earth is formed before the emergence of the ether, the stars, the sun, and the moon (5.449–472).

Accordingly, there is a third possible location in the narrative for several topics relating to the earth, viz. somewhere near the beginning of the account of natural philosophy. For if it is assumed that, after an introductory section, one starts with a cosmogony, this could entail dwelling on the fact that in the course of this process earth came to be in the middle of the cosmos, for instance because of its nature, and/or shape, as in Lucretius. Aristotle refers to this cosmogonical idea of some of his predecessors at *Cael.* 2.13.295a7–24, as we have seen. In Aristotelian terms, the categories of place, substance, and quality would come into play. The only remaining full account of cosmogony at the beginning of the *Placita* is A at P 1.4 (no name-label), 'How the cosmos came to be composed', where indeed the scene is set and earth comes to rest below the heavens because of the size and weight of its constituent atoms. A much shorter account is provided by the second part (lacking in P) of the fuller text of S for 2.7.1\*, name-label Parmenides; here the order of coming-to-be is first the earth, then air, then fire from which the sun and Milky Way, etc. A further remnant close to the beginning of a cosmology is 2.6\*, 'From what

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<sup>264</sup> See the useful tables comparing Lucr. Book VI and A 3.3–5 + 3.7 + 3.15–16 + 4.1 at Runia (1997) 97, and those comparing Lucr. Book VI, A 3.1–4.7, and Thphr. *Metars.* at Sedley (1998b) 158; but they do not take into account the different treatment of the origin and position of the earth in Lucr. Book V. Sedley *ibid.* 181–182 argues that the meteorology in Lucr. Book VI may depend on Theophrastus' *Physikai Doxai* (and elsewhere in his book that this influence is also visible in other parts of Lucretius). A more detailed treatment of the purported reception of Peripatetic thought in Epicurus and Lucretius must be postponed till another occasion (cf. above, n. 185). This also holds for further study of the human biology of A Book V in comparison with sections of Lucretius Books I, IV, and V against a Peripatetic background, but see the preliminary remarks below, Section 12, *ad fin.* On Lucretius and Aristotle see Schrijvers (1997), who is too optimistic about Lucretius' familiarity with the biological corpus, though the parallels he collects are worth considering. A preliminary discussion of Epic. *Ep. Pyth.* in relation to Aristotle and Theophrastus is at Mansfeld (1994) and of parallels between Lucretius and the doxographical tradition in Runia (1997), where see also for references to earlier literature.



sort of element did the God begin to create the cosmos?’ Here the issue has been given a theological twist in the chapter heading, but not in the lemmata.<sup>265</sup> We limit ourselves to its first lemma. P has ‘the physicists (οἱ φυσικοὶ) say that the coming to be of the cosmos began with the earth, as from a centre; the centre is the beginning of the sphere’, while S leaves out the name-label and at 1.21.3b adds this lemma to two other Aëtian lemmata, the first of which has as its name-label ‘the Stoics’.<sup>266</sup> Though the version of P may be a distorted echo of the Aristotle passage just cited, and the influence of Plato’s description of the Demiurge’s construction of the World Soul, starting with its construction at the centre and extending it to the extreme circumference may also be involved (*Ti.* 34a–b), we should above all think of how one draws a circle and recall the geometrical definition of the circle in Euclid *Elements* 1.1, cf. Hero *Mechanicus Definitions* 27 for definition and drawing. In the *Placita* a parallel is provided by the cosmology of Philolaus 2.7.6\* (S only): ‘the centre is first by nature’ (πρῶτον δ’ εἶναι φύσει τὸ μέσον).

The lemma 2.6.1\* stands the thought of A at P 1.4 on its head, where being at the centre (just as in the passage of Aristotle) is an effect, not a cause. Cosmogony did not *begin* with the earth; the idea that it did it clearly is an *interpretatio posterior*. However we shall accept that, according to the bland tenet at 2.6.1\*, the physical philosophers (perhaps including the Stoics) began their account of the formation of cosmological bodies with the earth, and put it at the centre, for in the diaeretic microcontext of the chapter this tenet is contrasted with 2.6.2\*, where fire and the fifth element come first, and 2.6.3\*, where the aether comes first and then fire (both 2.6.2\* and the first two items of 2.6.3\* are about the periphery of the cosmos). Other evidence for the Stoics confirms that the formation of the heavenly bodies is subsequent to that of the earth (which comes to be after fire has mutated into the wet substance). See the verbatim quotation from Chrysippus’ *Physics*

<sup>265</sup> See discussion at Part II, Spec. Rec. ch. 6, sect. 1 and 6.

<sup>266</sup> A problem is that corruption of στοιχοὶ into φυσικοὶ is not easy. The other evidence for the Stoic cosmogony at *SVF* 2.579–581 moreover (see below) does not support the suggestion that it *started* with the earth. Probably A had both name-labels, see reconstruction at 2.6.1\*: P 1.18.1 has ‘all the physicist from Thales to Plato denied the existence of the void’, while S omits ‘to Plato’ because he found his excerpt at 1.18.4c, pp. 160.17–61.2 W., sufficient. So he may this time have omitted ‘the physicists’. For the Stoic cosmogony see now Babut’s comments at Casevitz & Babut (2004) 321–323; cf. also above, n. 190, text to n. 198.

Book I at Plutarch *SR* 1053A (~ *SVF* 2.579) and the abstract from the same book of this work at D.L. 7.142 (~ *SVF* 2.581).

Noteworthy parallels for this state of affairs are forthcoming from the treatment of the early philosophers in Book I of Hippolytus' *Refutatio*. In the chapter on Anaximander, *Ref.* 1.6.3, the location, rest, and shape of the earth are treated after the principle and the cosmogony, but before the stars. The same sequence holds for *Ref.* 1.7, on Anaximenes, where in 1.7.4 the earth's shape and rest are treated before the heavenly bodies are dealt with; almost necessarily so, because at 7.5 these bodies are said to derive from the earth. In *Ref.* 1.8, on Anaxagoras, heavy things are collected at the middle, and the shape and immobility of the earth are described at 8.3, followed at 8.4–5 by sea, rivers, and Nile (cf. A 3.16–17, sea, 4.1, Nile; Lucr. 6.608–638 sea, 6.712–737 Nile), before the stars are discussed. In the Archelaus chapter, *Ref.* 1.9, the earth is again discussed after the principle and the start of the cosmogony, and before the stars. The much shorter and also poorer chapters on the other early philosophers in Book I of the *Refutatio* as a rule do not display this order, though in the Democritus chapter, at *Ref.* 1.13.4, we are told explicitly that 'in our cosmos the earth came to be before the stars'. This gives some support to the assumption that in P's version of A 2.6.1\* the designation 'the physicists' includes some of the early philosophers of nature, and that P omitted the Stoics and S the physicists.<sup>267</sup>

The order of subjects in these chapters of Hippolytus inspired Diels, who believed that what we have here are virtually undiluted extracts from Theophrastus' great doxographical treatise (abstracted from systematic chapters and collected under name-labels), to claim that the original chapter sequence of this treatise could in essence ('fere') be reconstructed from Hippolytus.<sup>268</sup> This order would be 'principle, God, cosmos, earth, sea, rivers, Nile, stars' (ἀρχή θεός κόσμος γῆ θάλασσα ποταμοί Νεῖλος ἄστρα) etc. This is *trop de zèle*. In the first place, there is no trace of the topic 'God' in Hippolytus' chapters. Diels must have put it here, perhaps without giving it further thought, because of the prominent position of the theological chapters in the first book of A. In the second place, there is no evidence as to what themes were treated, or in what order, in Theophrastus' lost treatise; it is safer not to indulge in this kind of speculation, though we may hypothesize that, like others,

<sup>267</sup> Cf. previous n.

<sup>268</sup> *DG* 145, 154.

he observed the descensus from macrocosm to microcosm. All we have are undeniably related but, as to order and contents, in several respects conspicuously diverging strands of a broad tradition, encompassing for instance A, Seneca, and Hippolytus, and it does not seem worthwhile, or even possible, to reduce the evidence we do have to an *Ursequence*.

A brief reference to the view that the earth (as element, not as cosmic body, though the latter is implied) is the first to come into being according to some people is also found at Ach 3, 32.2–3 Maass ~ 10.15 Di Maria. We should indeed now adduce the parallel tradition represented by Achilles' tract for comparison with A Books 1.4–15 and II, and also look for evidence in Theophrastus.

## 10. *Evidence in Achilles and Theophrastus*

*Summary.* In this section we compare chs. 3–6 of Achilles’ *On the All*, a cousin writing of Aëtius, with Books I–II of the *Placita*. The topics that are explicitly announced in Achilles are the same, while themes parallel to the theoretical chs. 1.11–29 are lacking. What we find in this later representative of the doxographical tradition moreover supports our argument that chs. 1.3–4, on principles/elements and cosmogony, belong together in their Aëtian order and were originally not so far distant from the cosmology of Book II. Yet there are substantial differences of detail. Although he elsewhere makes considerable use of the diaphonia there are for example no contrasting tenets in Achilles ch. 3, while his list of principles begins with Hellenistic authorities and ends by going all the way back to the Presocratics and their purported ancestors. Achilles’ lengthy ch. 4, ‘On the construction of the whole’, incorporates a number of issues, among which cosmogony, the sequence of cosmic layers, and the immobility of the earth. An important piece of evidence, argued away by Diels, is that both Achilles and Aëtius mention ‘Metrodorus the teacher of Epicurus’ as rejecting the thesis that there is only one cosmos. Cosmogony follows on the principles not only in Achilles but also in some of the abstracts of Theophrastus’ account of the Presocratics preserved by Simplicius. This may help explain what we have in both Achilles and the *Placita*.

A further argument in favour of the hypothesis that a large part of A Book I consists of chapters going back to ingredients that have been combined with a cosmological account can be derived from a comparison of the macrostructure of Books I and II of the *Placita* with a sequence of chapters of the *On the All* of Achilles. This tract, dealing with physics and astronomy, recycled as an introduction to Aratus and dating to the third century CE, does not depend on P, or even on A, but (insofar as physical doxography is concerned) on the tradition, or traditions, on which A also depends. Accordingly much of Ach, a cousin writing of A, is comparable to what we have in the *Placita*, but the differences between such parallel accounts are often quite substantial.<sup>269</sup> Diels in the *DG* believed this work

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<sup>269</sup> For Ach see Vol. 1:299–306. For the text we now have the useful critical edition of Di Maria (1996) (‘stampato Novembre’), published almost simultaneously with Vol. 1 (its date 1997 is due to the publisher’s wish to avoid 1996 in a book published at the end of

to be dependent on P, but as Pasquali tells us, this view was later retracted.<sup>270</sup>

We shall look at some aspects of the macrostructure of this curious work, limiting the inquiry to chs. 3–6.<sup>271</sup> The chapters that follow in Ach are about astronomical, cosmical, and a few meteorological phenomena (as well as about teaching astronomy). There are no parallels for the Aëtian chapters on the gods, or on more theoretical concepts such as form, matter, cause, and necessity, found in Book I of the *Placita*.

Ach ch. 3, entitled ‘On the principle of the whole’ (περὶ τῆς τῶν ὅλων ἀρχῆς) can be put alongside A 1.3, ‘On the principles, what they are’.<sup>272</sup> Seven of its nine lemmata are close to what is in A: same name-labels, similar tenets, but with some differences in phrasing. A few lemmata or parts of lemmata, as well as a few name-labels in other lemmata, are not paralleled in A. Like the Aëtian chapter, and like Arist. *Cael.* 2.13.295a7–24, also the chapter in Ach contains a few brief references to cosmogony, viz. in the lemma on Apollonius of Rhodes about Orpheus tacked on to the Empedocles lemma, while the final lemma (no name-label) is also about cosmogony, viz. (as we have seen) about earth as the first to be formed, followed by fire, water, and air—this takes care of a smooth transition to Ach’s next chapter.

But a major difference is in the ordering of the lemmata. The sequence of name-labels and tenets looks like a selective back-to-front reproduction of a sequence that, compared with the various and rather disorderly sources for this Aëtian chapter or Diels’ disputable reconstruction, is much different. If we take P’s arrangement as our guide, we may remember from Section 7 above that this begins with the Ionian Succession starting with Thales, and then lists the Italian Succession starting with Pythagoras. We have seen that this arrangement was followed up in Book II by the presence of archegetes of Successions, or their early followers, in the first lemmata of nineteen out of thirty-one chapters. The overall tendency of A is clear. But Ach provides a relative

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the year). Di Maria’s selective apparatus parallelorum provides an unfortunate blend of references to doxographical sources and (more often) modern editions of fragments.

<sup>270</sup> Pasquali (1910) 221 n. 1. This paper was one of the seven offprints Diels preserved together with his own copy of the *DG*, see list at Oniga Farra (1985) vi–vii n. 8. (On this *Supplementum* see Vol. 1:104–105 n. 119. We are most grateful to Dr. Oniga Farra for permission to use and quote this valuable study.)

<sup>271</sup> On the subject matter of these chapters see preliminary remarks Vol. 1:303.

<sup>272</sup> On similarities and esp. differences see Pasquali (1910) 218–226, and Vol. 1:302, 303.

chronology in reverse, from the Hellenistic philosophers to the Presocratics, and even to Hesiod and Orpheus. First, two archegetes of major Hellenistic schools, viz. Zeno and Epicurus, then Aristotle and (Socrates and) Plato, then the Presocratics: Empedocles (plus ‘Orpheus’, not paralleled in A),<sup>273</sup> Thales (plus Pherecydes who is said to follow Hesiod; not paralleled in A), and Heraclitus. Furthermore the presentation, if we are not mistaken, fails to list the tenets according to the method of diaeresis. The substances of the principles are not listed on a gliding scale, and their numbers fail to fall into an ordered series as well: Zeno two principles + four elements, Epicurus uncounted many principles, Aristotle as well as (Socrates and) Plato three principles + four elements, Empedocles four elements, and Thales, Pherecydes, and Heraclitus one principle each. That these views differ from each other is of course clear, but is neither emphasized *disertis verbis* nor intimated by arrangement. Yet Ach of course knows about the diaphonic structure of *Placita* (or *placita*) presentations. Below we cite a few instances of what are, beyond a doubt, diaphonic arrangements in his collection of chapters. What is more, the word διαφωνία (lacking in Di Maria’s index) is used no less than five times, e.g. ch. 17, and ch. 31, 67.27–29 Maass ~ 50.1–2 Di Maria, on Parmenides as the first to have divided the earth into zones (as is also stated in A at P 3.11.4), and on the πολλή διαφωνία which ensued among those who came later—a conflict of which no trace survives in A.

The heading of Ach’s quite extensive and detailed next chapter, ch. 4, ‘On the construction of the whole’ (περὶ τῆς συντάξεως τῶν ὅλων), is very much parallel to that of A’s next chapter, 1.4, ‘How the cosmos came to be constructed’ (πῶς συνέστηκεν ὁ κόσμος). The contents insofar as covered by these headings are also comparable *ad sententiam*, although the authorities cited are quite different. Ach moreover also discusses topics not announced in his heading, let alone paralleled in this Aëtian chapter, but there are parallels for them in other Aëtian chapters. Ach’s heading covers much more topics than one would expect on the basis of its wording.

A at P 1.4 provides an anonymous cosmogonical doctrine of clearly Atomist provenance. Ach at ch. 4 quotes Chrysippus and ‘the Archimedeans’, emphasizing the stability of the outcome rather than the generative process. He dwells at some length on the various concentric

<sup>273</sup> The name-label does not occur, but a reference to the Orphic poems (perhaps via someone citing Heraclides) is found at A 2.13.14\*.

cosmic layers and their sequence from circumference to centre according to Chrysippus, the Archimedeans and ‘the Orphics’, which allows him to introduce the theme of ‘the order of the cosmos’ (τὴν δὲ τάξιν, explicitly 33.17 Maass ~ 12.6 Di Maria), and to combine it with that of its construction. The heading of a chapter in the second book of the *Placita*, 2.7\*, is ‘On the order of the cosmos’ (περὶ τάξεως τοῦ κόσμου), and the five elemental spheres, or rather elemental concentric layers plus a central sphere, of Aristotle mentioned by Ach are also mentioned there, i.e. at 2.7.5\*. Then Ach turns to another subject again, viz. that of the immobility of the earth, which is the theme of a chapter in the third book of the *Placita*, 3.13, while the lemma on Xenophanes (inclusive of a verbatim quotation, fr. B28 DK) is paralleled in A at P 3.9.4 and 3.11.2; but in 3.11.2 the quotation is lacking. Ach’s chapter ends with a lemma on Empedocles, who (unlike Chrysippus & *alii*) failed to provide his elements with fixed locations. This lemma is for the most part paralleled in A’s already cited chapter on the ordering of the cosmos, viz. at 2.7.7\*. The opposition between Empedocles and the rest is the first clear example so far of a diaphonic disjunction of tenets provided by Ach. One’s impression is that selected subjects, following upon that of the formation of the cosmos and treated in subsequent chapters in one or more earlier representatives of the tradition, were incorporated in a single and larger chapter of the *On the All*, unless it is the epitomator, cannibalizing this work to compose an introduction to Aratus, who coalesced several chapters of the original treatise.

As already said, with regard to each other Ach and A are independent representatives of the same broader tradition. What at any rate will be clear from this hurried overview is that the sequence of chapters 3 and 4 in Ach is fully parallel to that of chapters 1.3 and 1.4 in A as to the *topics* that are *explicitly* announced. This supports our rejection of Diels’ thesis that A 1.4 is a *Fremdkörper* inserted by the well-meaning but incompetent doxographer. But then A 1.5, though according to Diels added for the same unsatisfactory reason, will also belong with a pre-Aëtian arrangement as to its theme and, presumably, to some of its contents.

The headings of the next two chapters in Ach are ch. 5, ‘What is the substance of the heaven’ (τίς οὐσία οὐρανοῦ), and ch. 6, ‘On the form of the cosmos’ (περὶ σχήματος κόσμου). To find the parallels for both in A we have to leave the beginning of Book I and to move on all the way to Book II of the *Placita*, that is to say to ignore the theological and conceptual chapters 1.6–29. In Book II ‘On the heaven,

what is its substance' (περὶ οὐρανοῦ, τίς ἢ τούτου οὐσία in P, slightly shorter but equivalent περὶ τῆς οὐρανοῦ οὐσίας in S) is ch. 2.11\*, and 'On the form of the cosmos' (περὶ σχήματος κόσμου) is ch. 2.2\*. The headings in A and Ach are virtually identical. Ach's chapter order seems to be the opposite of A's, but this is not really so. The words οὐρανός and κόσμος can be, and of course are, used interchangeably,<sup>274</sup> and Ach's chapter 'on the substance of the heaven' contains substantial paragraphs dealing with the cosmos.

The first subsection of Ach ch. 5, the contents of which are in part garbled, is parallel to the whole of 2.11\* on the substance of the heaven, as Diels and Maass of course already noticed. Next is a part on the cosmos qua living being, 35.2–14 Maass ~ 14.3–12 Di Maria; this is related to the theme of 2.3\*, 'Whether the cosmos is ensouled and administered by providence'. This is followed by a section on the nourishing of the cosmos, parallel to 2.5\*, 'from what source is the cosmos nourished' (πόθεν τρέφεται ὁ κόσμος). Ach hands down one (anonymous) tenet more than A, and presents the diaphonia in reversed order: A begins with Aristotle's argument against the cosmos being nourished, Ach ends with it. Diels *ad loc.* in the *DG* only takes the two parallel Aristotle lemmata in the doxographies into account, and has no eye for the larger diaeretic and diaphonic context. The next part, 35.19–28 Maass ~ 14.16–23 Di Maria, is about the question of whether or not the *cosmos* is eternal, which is the theme of 2.4\*, 'Whether the cosmos is imperishable'. In Ach this paragraph is almost entirely devoted to Plato, whose position is rather different from that attributed to him at 2.4.2\*, while ch. 2.4\* has no less than thirteen lemmata. In Ach six definitions of *cosmos* by Eudorus follow, the last of which is said to pertain to providence. In Ach we find a combination of different kinds of material, some more like the *Placita*, some more like AD.

This is followed by notes on Pythagoras as the first to use the term *cosmos*, and the difference between 'all' (including the void) and 'whole' (the *cosmos*) according to the Stoics, parallel to the lemmata 2.1.1\* and 2.1.9\*; see Section 7, *ad initium*.

In Ach this is then followed by an exposition of various etymologies and meanings, or definitions, of οὐρανός. These definitions, of the Stoic Zeno, Plato, Aristotle (with book title), and Plato again, are *de*

<sup>274</sup> Cf. above, n. 13, and Part II, Spec. Rec. ch. 5 §8.



*facto* about their belief that there is *one* cosmos only. The last phrase of the chapter on the other hand explicitly attributes the view that there are *many* kosmoi to 'Epicurus and his teacher (διδάσκαλος) Metrodorus'. This diaphonia is more visible in the parallel lemmata of A 2.1\*, where in the second lemma Plato Aristotle Zeno are the last of those listed who hold there is a single cosmos, and in the third lemma Epicurus the last of those listed as holding that the kosmoi are infinitely many. In A 1.5, 'Whether the All is one', a quantitative theme related to one of the themes of 2.1\*, the Stoics, Empedocles, and Plato at P 1.5.1–3 (P 1.5.1–2 is paralleled S 1.22.3a, with reversed order of the lemmata,<sup>275</sup> while the Plato lemma has been omitted) are *inter alia* said to hold that the cosmos is one, while in the last lemma (P 1.5.4 ~ S 1.22.3a) 'Metrodorus, the teacher (καθηγητής) of Epicurus', is said to have argued that the assumption of a single cosmos is absurd. The communality of themes between these at present widely separated Aëtian chapters (1.5, 2.1\*) is thus further confirmed by the thematic overview in Ach, and highlighted by the striking appearance of the purported teacher of Epicurus in Ach in a context close to 2.1\*, and in A not only at 2.1.3\* but also in a chapter, viz. 1.5, whose subject is close to that of 2.1\*.<sup>276</sup> This further supports the contention that according to an earlier macro-arrangement the contents of these Aëtian chapters may have been located close(r) to each other.

Finally, the first lemma of Ach ch. 6, 'On the shape of the cosmos', is virtually identical with the first lemma of 2.2\*, in a chapter with the same heading. Both P and Ach (noted by Diels) list the various cosmic shapes anonymously, though in a slightly different order: 'sphere-like', 'cone-like', 'egg-like'. S attributes the idea of the ball-like shape to the Stoics, and Leucippus-and-Democritus. P (lemma lost in S) adds that according to Epicurus all sorts of shape are possible. Ach then goes on about the sphericity of the cosmos as distinguished from the sphericity of the earth, and about the geometrical shapes attributed by 'the Pythagoreans' to the elements,<sup>277</sup> accidentally attesting to the quite

<sup>275</sup> Cf. above, n. 33.

<sup>276</sup> For Diels, *DG* 22–23 and 62, 'the teacher of Epicurus' at 2.1.3\* is an interpolation by P from 1.5.4, and the only Metrodorus in the *Placita* would be the man from Chios. According to Diels' position in the *DG* Ach follows P, so he also explains the parallel in Ach as an interpolation. We have seen that Diels later accepted Pasquali's argument that Ach is independent of P, above, n. 270. See further discussion at Part II, Spec. Rec. ch. 1, sect. 7.

<sup>277</sup> Cf. A 2.6.5\*, name-label Pythagoras, and 2.6.6\*, 'Plato in these matters too

common confusion, or overlap, between the earth as a cosmic body (e.g. sphere-like) and the element earth (cubic).

A further argument in favour of our belief that the topics of A 1.3, on the principles and elements, and A 1.4, on cosmogony, belong together in precisely this order is obtained from the presence of ingredients in three lemmata of A 1.3, which refer to cosmogony, occasionally even inclusive of cosmogonical details. The Anaximander lemma at P 1.3.2 ~ S 1.10.12 refers to ‘the Infinite, from which all things come to be and into which they pass away, which is why infinitely many kosmoi come to be’ (γεννᾶσθαι ἀπείρους κόσμους). P 1.3.4 ~ S 1.10.12, name-label Anaxagoras, has it that ‘the efficient cause is the intellect which orders everything’ (πάντα διαταξάμενον). P 1.3.8 ~ S 1.10.14, Heraclitus plus Hippasus, informs us that when the element fire is extinguished the cosmos of all things is produced (τούτου δὲ κατασβεννυμένου κοσμοποιεῖσθαι τὰ πάντα); a few further details are added (Stoicized).

These terse hints make one understand the need for a chapter, or paragraph (perhaps left over from, or replacing, an overview of several tenets), explaining cosmogony in fuller detail in the manner of A 1.4. Conversely, the presence of a chapter on cosmogony helps to clarify previous remarks about the origin of things from principles. It is safe to assume that the earlier doxographical tradition dealt with both topics in succession. Also note that *ad sententiam* the reference to infinitely many kosmoi in the Anaximander lemma of A 1.3 belongs with the background of ch. 1.4 in one further respect. The Atomists held there are infinitely many kosmoi, though this is not stated in 1.4. But at A 2.1.3\* (fuller version in S than in P) the series of name-labels of those who held that there are infinitely many kosmoi begins with Anaximander, ends with Epicurus, and includes among others Leucippus and Democritus. Already at P 1.5.4 ~ S 1.22.3a, name-label Metrodorus, there are said to be infinitely many kosmoi. Secondly, significant parallels for the contents of these Aëtian tenets of Anaximander and Anaxagoras are found in the abstracts from the introduction of Theophrastus’ *Physics* in Simplicius’ *Commentary on Aristotle’s Physics*. All these fragments are about the principles of the philosophers, from Thales to Plato, and we are told in what way their principles are capable of constituting the objects of experience. Simplicius moreover has preserved further details from Theophrastus for Anaximander and Anaxagoras. Cosmogony is

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Pythagorizes’ (cf. above, text to n. 193).

an important item in Theophrastus' account of the principles of the philosophers from Thales. He tells us that Anaximander's 'principle and element' is the Infinite, 'from which come to be all the heavens and the kosmoi in them' (ἐξ ἧς ἅπαντας γίνεσθαι τοὺς οὐρανούς καὶ τοὺς ἐν αὐτοῖς κόσμους).<sup>278</sup> Anaxagoras posits two principles according to Theophrastus, Intellect and matter. 'The kosmoi and the other natural things were produced' by Intellect separating the corporeal elements (ὑφ' οὗ διακρινόμενα τούς τε κόσμους καὶ τὴν τῶν ἄλλων φύσιν ἐγέννησαν). We have already seen above that, according to Aristotle, after their discussion of the material and efficient cause the early philosophers used to deal with the cosmogony (περὶ τῆς ὕλικῆς ἀρχῆς καὶ τῆς τοιαύτης αἰτίας ἐσκόπουν, τίς καὶ ποία τις καὶ πῶς ἐκ ταύτης γίνεται τὸ ὅλον, καὶ τίνος κινεῖντος).<sup>279</sup> The 'Theophrastean' parallels are duly noted in Diels' wonderful conspectus in five parallel columns of 'Theophrastus apud excerptores'.<sup>280</sup>

We may conclude that the combined treatment of the position of the earth and of the other themes connected with the earth after

<sup>278</sup> Simp. in *Ph.* 24.16–18 ~ Anaximander fr. A9 and B1 DK, Thphr. fr. 226A FHS&G ~ *Phys.Op.* fr. 2 Diels. For this passage and the two that follow see Mansfeld (2002d) 34–35.

<sup>279</sup> Simp. in *Ph.* 27.16–17 ~ Anaxagoras fr. A41 DK, Thphr. fr. 228A FHS&G ~ *Phys.Op.* fr. 4 Diels. And Archelaus 'tries to say something original in his (account of) the generation of the cosmos and of the other themes' (ἐν μὲν τῇ γενέσει τοῦ κόσμου καὶ τοῖς ἄλλοις περὶ αὐτὰ τι φέρειν ἴδιον), Simp. in *Ph.* 27.24–25 ~ Archelaus fr. 60A5 DK, Thphr. fr. 228A FHS&G ~ *Phys.Op.* fr. 4 Diels. For Arist. *PA* 1.1.640b4–15 see above, text to n. 71.

<sup>280</sup> DG 133–144, 'Theophrastus in his excerptors': quotations from Hippolytus *Refutatio* I, ps.Plutarch *Stromateis*, Diogenes Laërtius, A, and Theophrastus (the latter for the most part an empty column) about Anaximander, Anaximenes, Anaxagoras, Archelaus, Xenophanes, Parmenides, Leucippus plus Democritus, and Diogenes. No Empedocles and Heraclitus, presumably because in Hippolytus these philosophers are discussed in a way which according to Diels cannot be linked with Theophrastus, though it would have been possible to compare ps.Plutarch *Stromateis*, Diogenes Laërtius, A, and Theophrastus on Empedocles and Heraclitus in the same way over four columns. Hippolytus' account provides the first column of Diels' conspectus in five columns, and its sequence of items determines that in the four other sources, thus entailing modifications of the original order in the Theophrastus abstracts from Simplicius. Not all the (esp. Aëtian) parallels that could have been quoted have been inserted. On the other hand the attribution to Theophrastus of entire collections of doctrinal statements beyond the account of principles and cosmogony is not proven. A column for Aristotle is lacking; of course this would not contain remains or echoes of Theophrastus, but it would be useful to have a collection of Aristotelian parallels for these 'excerptores' and Theophrastus in a sixth column, to begin with those for the principles (some of these Aristotelian parallels are printed by Diels in the apparatus to his edition of the fragments of the *Phys.Op.* in the DG).

that of the meteorological subjects (which themselves come after the account of the heavens and the stars), as found in A, is only one of the options. Aristotle discussed the cosmological (plus cosmogonical) and geological aspects in two different treatises, *On the Heavens* and *Meteorology*. Seneca tells us that it would be proper to discuss the various issues concerning the earth in three places: its position in the treatment of cosmology, earthquakes in the meteorology (as he has done in the *Naturales Quaestiones*), and the rest elsewhere. Lucretius discusses the origin and position of the earth (which comes about before the other heavenly bodies are generated) in the cosmogony of his fifth book, and the earthquakes in the meteorological part of his sixth. We also hear, in various ways and through various channels, that according to some early philosophers as well as the Stoics the formation and positioning of the earth during cosmogony preceded that of the heavens and the stars. So we may assume that in these accounts, traces of which are still present in the *Placita*, the substance and position of the earth were treated near the beginning of the exposition of the history of the universe. The narrative *descensus* from periphery to centre<sup>281</sup> was not applied, or accepted, by everyone.

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<sup>281</sup> See above, n. 71.

## 11. *Parallels in the On the Heavens*

*Summary.* Continuing our inquiry we find that Aristotle's *On the Heavens* too provides background for the proem and first chapters of Book I and the first chapters of Book II of the *Placita*. There are no parallels for chs. 1.11–29. A definition of the scope of physics is followed by generous discussion of the issues whether or not the All, or the cosmos, is one, whether or not it is infinite, and whether it is generated and destructible or not. This is followed by considerations relating to the heavenly bodies, as in Book II of the *Placita*. The heavenly bodies are for the most part discussed in general terms and together, but the categories according to which they are investigated correspond to those of chapter headings in Aëtius Book II. The only detailed treatment in Aristotle's treatise of a cosmic body, as already noted, is that of the earth, found in the *Placita* in another book, viz. Book III, after the meteorology.

In Section 8 above we have looked at Stoic and Aristotelian parallels for the macrostructure of Book I including the theological and theoretical chapters. In Section 10 parallels (mainly in Achilles) have been studied for the macrostructure of A Books I and II, that is to say for Book I pr.–5 + Book II, so minus the theological and theoretical chapters which form the greater part of Book I. It will be useful to look briefly at some parallels for this overall sequence in the *On the Heavens* too. We shall see that a number of issues discussed in A are not found in the Aristotelian treatise, but where correspondences exist they are significant.

The proem of this Aristotelian treatise tells us that physics is about bodies and magnitudes and their affections/attributes and motions, and also about the principles of this sort of substance. This is not far from A 1.1–3. We may note also that the definition of *physis* at *Cael.* 1.2.268b17 is based on that at *Phys.* 2.1.192b21, also quoted in A at P 1.1.<sup>282</sup> The two related issues of A 1.5, heading 'Whether the All is one', viz. whether there is one cosmos or more<sup>283</sup> and whether it, or rather the All, is infinite or not, are both treated as *preliminary* questions by Aristotle, and at considerable length and in depth, over two chapters each. He discusses the question whether there is one cosmos or more at *Cael.*

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<sup>282</sup> Above, text to n. 131.

<sup>283</sup> A traditional issue, already at Plato *Ti.* 31a and Xenophon *Mem.* 1.1.14.

1.8–9, and whether the All is infinite or not at *Cael.* 1.5–7. We may infer, or at least acknowledge, that in A, too, they are preliminary. Before you deal with the cosmos you need to know that some people believe there are many kosmoi and others only a single one, and that some believe the All is finite while others believe that it is infinite. Also in subsequent chapters about the cosmos and its parts the idea of a plurality of kosmoi plays a part from time to time. A does not choose here in so many words, though of course most of the treatise is about our one world. Aristotle does choose, but more important than this difference in attitude is the communality of themes. At *Cael.* 1.5–7 Aristotle proves against (some of) the ancients that there can be no infinite body (so also already at *Phys.* 3.5), and at *Cael.* 1.8–9 that there can be only one cosmos, not more.

The two questions at issue in A 1.5, viz. whether or not there is one or infinitely many kosmoi, and whether or not the All is infinite, are both resumed at 2.1\*, with the simple heading ‘On the cosmos’. We have already argued<sup>284</sup> that these quasi-doublers, situated on either side of A 1.6–29, may originally have belonged together, and that the interruption of this preliminary cosmological argument by a succession of theological and theoretical chapters is so to speak compensated for by its resumption in 2.1\*. In the first book of Aristotle’s *On the Heavens* there is nothing between chapters 9 and 10 that is similar to the theological and theoretical themes of A 1.6–29. For theoretical subjects such as time, place, and necessity we have to look at the theoretical account of these matters in Aristotle’s *Physics*, as we have seen in Section 8.

In the no less than four chapters *Cael.* 1.10–12.1, which follow upon those dealing with the oneness of the cosmos versus a plurality of kosmoi, Aristotle discusses whether the cosmos is ungenerated rather than generated and indestructible rather than destructible, which in A is the theme of another chapter belonging with the complex concerned with the cosmos in his second book, viz. 2.4\*, ‘Whether the cosmos is indestructible’. This theme is an example of a problem in physics at Arist. *Top.* 1.14.105b24–25.<sup>285</sup> The problem of A 2.10\*, ‘What is the right part of the cosmos and what the left?’, is treated immediately next at *Cael.* 2.2. Aristotle then goes on with the heavenly bodies in the chapters that follow, just as A, although he discusses these in general

<sup>284</sup> Above, Sections 2, 5, and 10.

<sup>285</sup> Cf. Mansfeld (1990a) 3204–3205, and below, Section 14.

terms, with only a few remarks on the moon and the sun, while A discusses a number of separate issues for stars as well as sun and moon. Looking back at and summarizing his treatment of the heavenly bodies Aristotle says, *Cael.* 2.12.293a12–14:

This is what has been said about the stars that move in a circle, and what they are according to *substance* and according to *shape*, and about their *motion* and their *order*, ἀλλὰ περὶ μὲν τῶν τὴν ἐγκύκλιον φερομένων κίνησιν ἄστρον εἴρηται ποῦ ἅττα κατὰ τε τὴν οὐσίαν ἐστὶ καὶ κατὰ τὸ σχῆμα, περὶ τε τῆς φορᾶς καὶ τῆς τάξεως αὐτῶν.

Note the parallels in the sequence of these topics and categories with Aëtian themes and categories, and the verbal parallels with Aëtian headings, though (unlike Book III on the earth) there is not much sharing of material:<sup>286</sup> A 2.13\* in S ‘On the substance of the stars’, *περὶ οὐσίας ἄστρον*, in P the longer and more descriptive ‘What is the substance of the stars, the planets and the fixed stars, and how did they come to be’ (τίς ἡ οὐσία τῶν ἄστρον, πλανητῶν καὶ ἀπλανῶν, καὶ πῶς συνέστη—the last three words may be an addition by P). Ch. 2.14\*, ‘On the shapes of the stars’ (*περὶ σχημάτων ἀστέρων*); the word *ἀστέρων* is omitted in S’s coalesced heading. Ch. 2.16\*, ‘On the motion and movement of the stars’ (*περὶ τῆς τῶν ἀστέρων φορᾶς καὶ κινήσεως*)—S’s heading, ‘On the movement of the stars’ (*περὶ ἄστρον κινήσεως*) is again shorter, but ‘motion’ (*φορᾶς*) is also found in Aristotle. Ch. 2.15\*, ‘On the order of the stars’ (*περὶ τάξεως ἀστέρων*). The categories of substance and shape, and the issue of their motions i.e. the categories of place, doing, and being-affected, are mentioned *Cael.* 2.7.289a11–13 for the stars. The substance of the stars is the first body according to Aristotle, their shape spherical, their motion circular, and their order to be established by the astronomers.

The chapter on the earth, *Cael.* 2.13 (ch. 14 gives Aristotle’s own view), is perfectly parallel to much of A’s treatment of the earth in Book III; in fact, as we have seen above, some of A’s chapters on the earth as to their structure and even part of their material are closely dependent on Aristotle’s exposition.<sup>287</sup> The categories of place and shape, and the theme of the motion of the earth as opposed to its rest are mentioned 293b15–17, 296a21–23, and in the summary at 2.14.297a6–8.

<sup>286</sup> In A the contrast between *ἀστέρες* and *ἄστρα* (for which see Ach ch. 14.1: ἀστήρ the individual, ἄστρον the configuration) is irrelevant, see Part II Spec. Rec. ch. 5 §1.

<sup>287</sup> Section 9.

This backward glance at the evidence in Aristotle confirms the impression gained by comparing that of Achilles and Hippolytus. Several topics found among the chapters 1.6–29 have been added in order to modernize the treatment of the theory of physics and make it comply with the demands of the treatment of subjects according to the system of the Stoic *physikos logos*. Precedents of the discussion of such topics according to Aristotle's treatises could also justify this adaptation. Presumably the presence of anonymous definitions at the beginning of several conceptual chapters in succession—only ch. 1.12 does not have one—in A Book I (1.8, 9, 10, 11, 13, 14, 15; much rarer in the later books) also is a symptom of the modernization that was carried out.



## 12. *Soul, Senses, Semen: Aristotelian, Lucretian, Stoic Sequences*

*Summary.* The soul, in the large sense of cognitive, sentient and motive, and vegetative soul, is treated mostly according to the Aristotelian categories in Books IV and V (spermatology). The order of exposition largely follows that of Aristotle's treatment in the *On the Soul* and *Parva Naturalia*. As the chapters on the soul and the senses are discussed one by one, we find that this account (like that of Book I) has been upgraded by the insertion of chapters dealing with topics of major interest in Hellenistic philosophy, such as ch. 4.5, on the regent part. Before the chapters on the individual senses we have two chapters dealing with the Stoic theory of perception, concept formation, reason, presentation, imagination, etc. (4.11–12). There are impressive similarities between the Aristotelian, Epicurean, and Stoic examination and presentation of these matters. We note that the perhaps unexpected location of a chapter on dreams (5.2) before those on spermatology and related themes (5.3 ff.) is precisely paralleled at Lucretius 4.962–1057. We further note that a subpart of the Stoic *physikos logos* shared between philosophers and doctors is said to deal successively with 'the soul, and with what goes on in the soul, and with semen and similar topics'. This formula is in fact an excellent description of the contents of Books IV–V of the *Placita*, and helps explain the frequency of medical doxai in these Books. The phrase 'what goes on in the soul' is no doubt relevant in relation to the cognitive chapters 4.11–12. Thus the upgrading of the psychology conforms to the Stoic *physikos logos*.

An update of the formal exposition and the addition of further topics are also features of the account of the soul and the senses in A Book IV. As already argued elsewhere, several macrostructural markers are related to Aristotle's account in the *On the Soul*.<sup>288</sup> The categories again play a decisive part:<sup>289</sup>

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<sup>288</sup> Mansfeld (1990a) 3079 n. 81, 3203–3204.

<sup>289</sup> Arist. *An.* 1.1.402a23–25, πρῶτον δ' ἴσως ἀναγκαῖον διελεῖν ἐν τίνι τῶν γενῶν καὶ τί ἐστι, λέγω δὲ πότερον τόδε τι καὶ οὐσία ἢ ποιὸν ἢ ποσόν, ἢ καὶ τις ἄλλη τῶν διαγεθεῖσων κατηγοριῶν; cf. *An.* 1.5.410a13–15. For the division of the categories cf. also below, n. 330 and text thereto. The issue of the substance of the soul in various doxographical passages is studied Mansfeld (1990a) 3065–3085, that of the parts of the soul *ibid.* 3085–3089, of motion versus rest 3089, of mortality versus immortality 3089–3091, of the location of the regent part 3092–108; for anticipations in Aristotle

First, no doubt, it is necessary to determine in which of the genera [i.e. categories] the soul lies and what it is, i.e. a this and a substance, or a quality, or a quantity, or some other of the categories that have been divided.

For these categories compare some of the tenets in the first chapter dealing with the soul, A 4.2 (heading ‘On the soul’): A at P 4.2.1 ~ S 1.49.1a Thales is ‘the first’ to declare that the soul is always moving, or selfmoving.<sup>290</sup> Next, A at P 4.2.2 ~ S 1.49.1a Pythagoras, followed at S *ibid.* by Xenocrates (omitted by P), says it is a ‘number’ (ἀριθμός), thus a quantity. A at P 4.2.3 ~ T 5.17 Plato says it is an intelligible substance, οὐσία; S 1.49.2 substitutes a brief quote from Plato *Phdr.* 247c for the Aëtian Plato lemma. We note the sequence of the categories: motion i.e. doing, quantity, and substance. That motion is treated first presumably echoes an important aspect of Aristotle’s treatment of earlier doctrines in the second chapter of Book I of the *On the Soul*, where the predecessors are said to have made the soul the principle of motion, or of cognition, or of both. See also below, on ch. 4.6, and on the Alcmeon lemma in ch. 4.2 as a precise echo of a phrase in the same chapter of the *On the Soul*.

Differences as to substance etc. and as to number are topics dealt with in both chapters, A 4.2 as well as 4.3. A subdivision of the aspect of quantity is formulated next at *An.* 1.1.402b1, ‘we should also inquire whether the soul is divisible or without parts’ (this issue also at *An.* 1.5.411b5, 3.9.432a22–23). Compare the main theme and chapter heading of A 4.4, ‘On the parts of the soul’, a chapter extant partly in P and partly in T. Numbers of parts given are two, three, five, and eight, and we are justified in assuming that in A these were listed in ascend-

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see *ibid.* 3210–3211. For Tertullian *On the Soul* (topics: from the corporeality of the soul to its fate after death) in relation to the *Placita* see Waszink (1947) 30–33\*. For parallels in virtually the same sequence in Lucretius Book III see Mansfeld (1990a) 3143–3152 (substance of soul, parts, location of regent part, mortality). These parallels are important because they are early, see also already Schrijvers (1976) at (1999) 121–123 for the whole range of themes, from the essence of soul to the spermatology etc., in Lucretius Books III and IV; cf. the present Section, *ad fin.* For spermatology plus psychology see the parallel in Megasthenes *ap.* Strabo, above, text to n. 65a. In the *Pythagorean Hypomnemata* at D.L. 8.28 the spermatology is incorporated in the psychology (cf. above, n. 71). For Galen’s checklist *PHP* 3.1.9–17 in relation to A 4.2–3 (substance), 4.4 (parts), 4.5 (location of regent part), 4.6 plus 4.8–13 (‘various functions: sense perception, imagination, thought, speech’) see Tieleman (1996) 8–11, (2003) 22–23. A later cousin writing of A, Nemesius *Nat.Hom.* ch. 2 (περὶ ψυχῆς) is explicit about the ‘categorical’ aspect (pp. 17.10, 23.19–20, 25.2, 30.4–5, 37.21–22 Morani).

<sup>290</sup> See below, n. 374.

ing order: A at P 4.4.1 ~ T 5.19 Pythagoras and Plato two and then (through subdivision of the second part) three parts, at T 5.20 Aristotle five parts, at P 4.4.2 ~ T 5.20 the Stoics eight parts. A at P 4.4.3 (4.4.6 Diels), on bipartition according to Democritus Epicurus, is only seemingly out of order, because it is also concerned with the category of place, viz. the localization of each of the two parts, which the other lemmata are not. The final lemma, P 4.4.4 (4.4.7 Diels), either has been put in the wrong place by the epitomator (it could belong in the context of S 1.48.7, see below), or, more probably, is still about the category of place: it tells us that according to Democritus all things, even dead bodies, participate in some sort of soul, the latter since they still participate in a bit of warmth that perceives.<sup>291</sup> This implies that everywhere there is some soul.<sup>292</sup> The preliminary issue of partlessness (or being in one part) is sometimes found in discussions dependent on the *Placita* literature, e.g. Tertullian *On the Soul* 14.1.5.

The issues concerned with substance and quantity are also mentioned *An.* 1.2.404b30–405a3, ‘the experts differ about the principles, what (τίνες [substance]) and how many’ (καὶ πόσαι [quantity/number]).<sup>293</sup> The difference is greatest between ‘those who hold them to be corporeal and those who hold them to be incorporeal (οἱ σωματικῶς ποιοῦντες τοῖς ἀσώματους)’, and from both these parties ‘dissent those who make a blend (μίξαντες) and draw their principles from both sources (ἀπ’ ἀμφοῖν)’: a *compromise* position. Another compromise position, though between different rather than opposed tenets, is mentioned a few lines earlier (404b28–30), viz. of those who ‘compound’ (συνέπλεξαν ἐξ ἀμφοῖν) the soul as both originative of movement and cognitive.<sup>294</sup> Of the latter an example is given, viz. the soul as self-moving number, number being what is cognitive (cf. A at P 4.2.2 ~ S 1.49.1a, cited above). These examples in Aristotle of views in physical philosophy that cannot be part of a diacresis but have to be appended in an explicit way are important. Theophrastus in the *De*

<sup>291</sup> Cf. A at S 1.50.35 (4.9.20 Diels), possibly improving on Thphr. *Sens.* 4 ~ Parmenides fr. A46 DK, dead bodies still perceive darkness and cold, ‘and in general the whole of being possesses some knowledge’ (ὅλως δὲ πᾶν τὸ ὄν ἔχειν τινὰ γνώσιν). Also cf. Empedocles fr. B110.10 DK.

<sup>292</sup> Cf. Arist. *An.* 1.5.411a6–7, ‘some say that the soul is intermingled with the whole’; below, text to n. 371.

<sup>293</sup> Also mentioned 1.2.405a11–12. Compare the foundational division *Phys.* 1.2, cited below, text to n. 340.

<sup>294</sup> Also cf. *An.* 1.9.409b11–12; cf. above, n. 8 and text thereto, text to n. 110.

*Sensibus* applies a very similar form of cataloguing.<sup>295</sup> In A the originally Aristotelian opposition between incorporeal and corporeal in the context of psychology, explicitly stated A 4.3.1, is basic for the distinction between the tenets of the two chapters on the soul, and sometimes applied elsewhere in the *Placita*, as we have seen in Section 5.

The chapter on the parts of the soul, as noticed above, ends with lemmata that are also about the category of place. This arrangement prepares the way for the next chapter, A at P 4.5, heading ‘What is the regent part and wherein is it’ (τί τὸ τῆς ψυχῆς ἡγεμονικὸν καὶ ἐν τίνι ἔστιν), which is about the various proposals concerning the (categories of) substance and place of this part. Aristotle, as we know, argues that the heart is the chief psychic organ (e.g. *Iuv.* 3.469a4, *PA* 3.4.665b18–22) and rejects the view that the brain is the centre of sensation (*Sens.* 2.438b25–30).<sup>296</sup> In the *On the Soul* he speaks of the ‘part of the soul with which it knows and thinks’ (this is what in Hellenistic times is called the *hégemonikon*), and asks whether it is ‘separable or not in definition, or as to extension as well’ (3.4.429a10–12). His answer in *An.* 3.4 is that it has no bodily organ, so has no specific location.

Accordingly the second theme of the Aëtian chapter corresponds to a problem, which indeed is on Aristotle’s agenda, but in his view is a dead alley. It has been added here because, although discussed also earlier, the theme became especially important in Stoic philosophy, and then in Hellenistic philosophy generally. Thanks to Galen we know that Chrysippus in his *On the Soul* also first discussed the substance of the soul, then its parts, and then the location of its regent part.<sup>297</sup>

At the end of ch. 4.5 Diels added two lemmata from S’s chapter 1.48.7, ‘On intellect’. *Ad locum* he points out that it is ‘dubium’ whether these lemmata belong there. We believe that it is virtually certain that P omitted a brief chapter, found in A’s account of psychology, with the same heading as the chapter in S.<sup>298</sup> With some effort one can maybe still connect the first of these lemmata, on intellect entering from outside according to no less than five name-labels: Pythagoras, Anaxagoras, Plato, Xenocrates, and Cleanthes (θύραθεν νοῦν—for this

<sup>295</sup> Cf. above, text to n. 9.

<sup>296</sup> For the difference of opinion of Plato and Aristotle on the location of the soul see Mansfeld (1990a) 3212–6.

<sup>297</sup> Gal. *PHP* 3.1.9–17; see above, n. 225 and text thereto, and n. 289; cf. Tieleman (1996) xxxv–xxxvi, 181–184, and (2003) 20–24.

<sup>298</sup> As he certainly omitted the chapter ‘Where has the cosmos its regent part?’ (S for A 2.4.15–17), see Diels *DG* 62, ch. 2.4a\* in our reconstruction, and below, n. 305.

explicit formula, not in the *On the Soul*, see Arist. *GA* 2.2.736b27–29), with the main issue of A 4.5, the place of the regent part. This location then would be first somewhere outside, then somewhere inside. But the last lemma, on the tenet that intellect and soul are identical, and that no animal would be irrational, carrying three Presocratic name-labels (Parmenides and Empedocles and Democritus), is at a first glance more difficult to connect with this chapter than with the final lemma of the previous chapter, which is about the participation of all things in soul to some extent according to Democritus. Aristotle states that according to Democritus soul and intellect are identical (*An.* 1.2.404a28, a32, 405a9, cf. *Resp.* 4.472a7–8), and in general argues that the early philosophers failed to distinguish between perceiving and thinking; Theophrastus to some extent disagreed with this verdict.<sup>299</sup> So what we have in this lemma may be an instance of the ‘return to Aristotle’ tendency that we have also noticed elsewhere in the *Placita*. Perhaps ch. 4 of the short tract *On Respiration* was influential, where both the view of Democritus on the identity of intellect and soul (see above) and a Democritean intellect entering from outside (4.472a22) are found. The latter idea is implicitly present at *An.* 1.2.403b31–404a13, where the identity of soul and intellect according to Democritus is a matter of spherical atoms, which in respiration enter from outside (θύραθεν ἐπεισιόντων ... ἐν τῷ ἀναπνεῖν). A relation of a sort with this chapter would to some extent associate the two last lemmata of Diels’ ch. 5.5 with one another. The label Anaxagoras presumably landed in the penultimate lemma because according to Aristotle his Intellect is ‘unmixed’, *An.* 1.2.405a17, esp. 3.4.429a18 (chapter on intellect), and cf. also *Phys.* 8.5.256b26 and *Met.* A 8.989b15–16.

The Aëtian ch. 4.5, with its various Aristotelian links, has thus been inserted in what at a first glance looks like an Aristotelian context: the next chapter, A 4.6, ‘On the movement of the soul’, though very short in both S and P, is about a theme which is of major importance in the *On the Soul*, where for instance one group of doctrines of the predecessors are said to have been about the soul as principle of movement (1.2.403b28–29, etc.). But as we have just seen the order of themes in A 4.2–5 corresponds precisely to that of Chrysippus’ treatment. What we have here therefore is another instance of a coincidence of Stoic topics with topics of a different provenance, just as, for instance, in A

<sup>299</sup> See Mansfeld (1996). For literature on the debate *de sollertia animalium* (to use a Plutarchean designation) see Mansfeld (2005b) 378 with notes.

Book I the topic of the principles is both Stoic and Peripatetic. Once again we may speak of crypto-syncretism.

Ch. 4.7, ‘On the indestructibility of the soul’, is about a topic that is not of primary importance in Aristotle, who cautiously limits indestructibility to (part of) the intellect (*An.* 3.5, *GA* 2.2). Alcmeon’s view that the soul is immortal is not found in this chapter, but in the second half of a lemma A 4.2.2 at S 1.49.1a. This is interesting because it reveals the *vis inertiae*, or *vis conservatrix*, that is at work in some places of the *Placita*. This lemma states that Alcmeon said ‘the soul is a self-moving entity according to an eternal motion, which is why he assumes it is immortal and resembling what is divine’ (ἄθάνατον αὐτὴν καὶ προσεμφερῆ τοῖς θείοις). This phrase really quite accurately echoes Arist. *An.* 1.2.405a28–31, where Alcmeon is said to have shared the view that things, and more particularly the soul, are in motion, and to have affirmed ‘that it is immortal because it resembles the immortals’ (ἄθάνατον εἶναι διὰ τὸ ἐοικέναι τοῖς ἀθανάτοις)—see above on the prominence in the first lemma of ch. 4.2 of the tenet attributed to Thales. Aristotle’s brief description is echoed by Boethus (the Peripatetic, presumably) quoted in a fragment of Porphyry’s *On the Soul against Boethus* in Eusebius, *PE* 11.20.8–9 ~ Porphyry fr. 262 Smith as well. A 4.2 at S 1.49.1a is moreover very close to Cicero *N.D.* 1.27 (a lemma not paralleled in A’s chapter on what are gods, 1.7), thus again revealing the impact of the shared tradition: ‘Alcmeon of Croton, who attributed divinity to the sun and the moon and the rest of the stars, and in addition to the soul’. In A this has survived in the context of psychology only, in the same environment as its Aristotelian predecessor. In Cicero’s Epicurean source it has been moved to the doxographical account of the nature of the gods. Here too A here turns out to be less innovative in relation to the anterior tradition.<sup>300</sup>

We briefly note that a similar account of subjects and sequence of topics is to be found in Lucretius Book III.<sup>301</sup> At 3.34–35 the poet announces his theme: ‘the nature of mind and soul’, *animi natura ... atque animae*. At 3.94–135 we learn that they are corporeal, i.e. part of the body and located in the body though we are not yet told exactly where; cf. A 4.2–3, A at P 4.4.3–4. That they are corporeal is further

<sup>300</sup> For the relation between the second part of A 1.7 and Cic. *N.D.* 1.25–41 see above, n. 185 and text thereto.

<sup>301</sup> See Schrijvers (1976) at (1999) 122–123, (1997) at (1999) 40–42, Mansfeld (1990a) 3143–3152.

argued at 3.161–176, *naturam animi atque animai / corpoream*, and what sort of bodies they consist of is explained 3.177–287. As to location (cf. A 4.4.3–4, 4.5) we are informed that the mind is in the chest, and the soul in the body as a whole, 3.136–160. The mind's motion is treated 3.177–207, cf. A 4.6, 'On the motion of soul', a chapter with rather restricted contents. That soul and mind are mortal, just as the body, is explained and argued in a number of ways at 3.323–358 and 3.417–829, cf. A 4.7 (P only), 'On the imperishability of soul', where the view that it is perishable is also represented (attributed to Democritus Epicurus).

The chapters on sense perception and the senses that follow in A, 4.8–21, come after those on the soul in more or less the same way and order as chapters dealing with sense perception and the senses follow on those dealing with the soul in the *On the Soul*, and also in Lucretius.<sup>302</sup> First ch. 4.8, *περὶ αἰσθήσεως καὶ αἰσθητῶν* ('On sense perception and sense objects'), category of substance, covers topics treated *An.* 2.3–6 and precisely reproduces the title of one of Aristotle's so-called *Parva Naturalia*. In the first lemma, P 4.8.1 (the Stobaeian parallel printed in the *DG* has been interpolated from P, see Wachsmuth *ad S* 1.50.1), we notice that A's Stoics have adopted Aristotelian terminology to justify a division: 'sense perception is said in many senses' (πολλαχῶς δὲ λέγεται ἡ αἴσθησις). The next chapter, 4.9, *εἰ ἀληθεῖς αἱ αἰσθήσεις καὶ φαντασίαι* ('Whether the senses and the presentations are true'—καὶ φαντασίαι only in P) relates to a topic of particular importance in Hellenistic philosophy. In Aristotle (*An.* 2.6) and the *Placita* the issue of their reliability comes before the account of the individual senses, in Lucretius (4.478–521) it is found between the account of vision and that of hearing, taste, and smell. Reliability involves the category of quality. Chapter 4.10, *πόσα εἰσὶν αἱ αἰσθήσεις* ('How many are the senses'), category of quantity, is about a topic which not only is dealt with by Aristotle, but is also of particular importance in Theophrastus' *De Sensibus*, where it is one of the primary divisions according to which doctrines concerning the senses are presented.<sup>303</sup> The *Placita* chapter among other things is about

<sup>302</sup> Noted for A 4.13 plus 16–18 in relation to *An.* 2.7–10 at Baltussen (2000b) 229.

<sup>303</sup> Ax (1986) 77 points out that (only) in general terms the account of the senses in A 4.8–20 recalls the thematic exposition of Thphr. *Sens.* For A 4.16 + 19–20, on hearing and (vocal) sound, see the careful analysis *ibid.* 77–86, where it is proved that the echoes of *Sens.* are rather less frequent than one may believe on the basis of Diels' argument. The independent survey of Baltussen (1993) 203–224 confirms this, showing that A 4.8–23 contains Presocratic and Platonic material derived as well as not derived from this

the problem of whether there are five senses, or more than five. Aristotle rejects that there are more than five at *An.* 2.9.421b20–21, and more explicitly *Sens.* 5.444b19–20. We note that in A 4.10 there is no trace of Theophrastus' surprising attribution of only two senses, viz. hearing and sight, to Plato, or of his statement that Parmenides failed to speak of the individual senses and to distinguish between sensation and thought.<sup>304</sup>

Four of the five senses (a chapter on touch is lacking)<sup>305</sup> are presented in four chapters in the same order as chapters in Aristotle's *On the Soul*, viz. A 4.13 sight, 4.16 hearing, 4.17 smell, 4.18 taste (plus 4.19 voice), corresponding to Arist. *An.* 2.7–10. The senses are treated in basically the same order in Lucretius Book IV: 4.26–468 sight, 4.524–614 hearing (comprising at 4.526–541 an account of voice as corporeal), 4.615–627 taste, and 4. 672–705 smell, the latter two in an order that is the converse of that of A and Aristotle. A 4.14 *περὶ κατοπτρικῶν ἐμφάσεων* ('On apparitions in mirrors') belongs with 4.13 *περὶ ὁράσεως, πῶς ὁρῶμεν* ('On sight, how we see'), as is clear from the important lemma 4.14.4 (and paralleled in Lucretius' lengthy treatment of sight by the inserted account of apparitions in mirrors, 4.269–323).<sup>306</sup> On A 4.13–14 see further below, Section 16.

Ch. 4.15 *εἰ ὁρατὸν τὸ σκοτός* ('Whether darkness is visible'), too, belongs with the topic of sight; this explains its appended position. Its three extant lemmata deal with various Stoic tenets according to which darkness is visible.<sup>307</sup> A diaphonia has surely gone missing, for according to Aristotle darkness is invisible, *An.* 2.10.422a20–21; so, too, Lucretius, 4.348–352.

For 4.19 *περὶ φωνῆς* ('On sound/voice'), which comes after the chapters on the individual senses, there is no equivalent separate chapter in the *On the Soul*. 'Voice' (φωνή) is discussed together with hearing in Aristotle's chapter on hearing, *An.* 2.8.419b4–421b6. In the third lemma

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work, and that Diels' view of dependence of this section of A from *Sens.* is one-sided; also see Baltussen (2000b).

<sup>304</sup> *Sens.* 3 (Parmenides), 4 (Plato). See Baltussen (1993) 105–108, Long (1996), Mansfeld (1996) 172, 188.

<sup>305</sup> See below, this Section, *ad fin.* Nemesius *Nat.Hom.* ch. 8 is entitled *περὶ ἀφῆς*. It is mainly based on Galen and does not contain phrases that remind one of the phraseology of the *Placita*.

<sup>306</sup> Cf. above, text to n. 227, below, text to n. 379.

<sup>307</sup> For 4.13–14 see below, Section 16. Ax' suggestion (1986) 77 n. 59 that chs. 4.14–15 seem to be 'zufällig eingestreut' is unsatisfactory.



of the chapter ‘On hearing’, P 4.16.4 ~ S 1.53.3, φωνή is already mentioned.<sup>308</sup> But according to the standard Stoic theory voice is a separate part of the soul (see this Section, *ad finem*), which presumably is why it gets a separate chapter in the section of the *Placita* dealing with psychology, after the regent part and the individual senses and before the spermatology which is to follow in Book V. Compare the version of the standard Stoic division of the soul at P 4.4.2 ~ T 5.20: eight parts, viz. the five senses in the order sight, hearing, smell, taste, and touch, as sixth the vocal, as seventh the spermatic, and as eighth the regent part (which in other versions may be listed in a different position).

Chapter 4.20, heading ‘Whether the voice is incorporeal and how echo comes to be’ (the words ‘how echo comes to be’ are only in P),<sup>309</sup> deals with a subordinate problem. The diaeresis of corporeal and incorporeal views in this context is paralleled in Sextus, *M.* 6.54–55, *Scholia in Dion. Thrac.* 181.1–17, 482.6–11.<sup>310</sup> Lucretius, as so often, only argues for the position adopted: voice is corporeal, 4.524–548. How ‘echo comes to be’ is discussed in Aristotle’s argument about sound cited above, 419b25–29 (partly quoted Porphyry *In Ptolemaeum* 52.15–17); he even uses the image of the ball that bounces back found at the end of the last lemma of this chapter, with the name-label ‘the Stoics’. In Lucretius an account of the echo is contained in that of sound and hearing, 4.572–579.

But before the *Placita* chapters on the individual senses two other detailed and important chapters are found, unfortunately extant in P only. These deal with the Stoic doctrine of perception, concept formation, reason, presentation (4.11 ~ *SVF* 2.83), and ‘the difference between impression, impressor, imagination, and figment’ (φαντασία φανταστών φανταστικόν φάντασμα, 4.12 ~ *SVF* 2.54). The name-labels are, respectively, ‘the Stoics’ and ‘Chrysippus’. Ch. 4.12 is a sort of appendix to ch. 4.11, where in the general Stoic account *phantasma* is defined differently, viz. is not a figment but ‘is called concept when it befalls a rational soul’. Unlike the average *Placita* chapter these two are

<sup>308</sup> See further Ingenkamp (1966) 80; Ax (1986) 77–86, esp. on the ‘translemmatization’ (‘Umlemmatisierung’—lemma is here used in the sense of heading, or theme) in A of tenets pertaining to hearing to tenets pertaining to voice.

<sup>309</sup> These words pertain to the final clause of the last lemma of the chapter.

<sup>310</sup> See Ax (1986) 177–181. We do not agree with his suggestion *ibid.* 77 n. 59 that chs. 19 and 20 too are ‘zufällig eingestreut’ (see above, n. 307). The issues are attested elsewhere so real enough, and dealing with (vocal) sound after the senses instead of immediately after hearing is simply one of the possible options.

in *oratio recta*, the first beginning with ‘The Stoics say’, the second with ‘Chrysippus ... says’. Diels, as we have seen above, Section 3, rejected these chapters out of hand as foreign to the ‘limpidus fons’, and simply solved the problem of their presence by arguing that they derived from a Stoic source. We, however, see the presence of these items here as a conscious effort to improve and update the account by including a substantial account of these all-important Stoic views after the general chapters on sense perception and before those on the individual senses, which provide far less information on the Stoics. So we are again faced with an interruption by other material of an exposition that by and large follows an originally Aristotelian pattern, just as is the case of ch. 4.5 on the regent part. An important difference is that 4.5 contains a plurality of tenets ascribed to different authorities in the same way as in the majority of *Placita* chapters, while chs. 4.11–12 are poly-lemmatic not because authorities differ but only because the account treats one concept, or part of systematic doctrine, after another. We assume that it is not too bold to suggest that these chapters perhaps replace an account more similar to that of *phantasia*, perception, thought, and concept formation in a difficult chapter in Aristotle’s *On the Soul*, viz. 3.4.

We have noticed above, in Section 8, that a subsection of the generic division of the Stoic *physikos logos* at D.L. 7.133 was περὶ ... τῶν ἐν ψυχῇ γινομένων, about ‘what goes on in the soul’; we may believe that this includes what goes on in chapters A 4.11 and 4.12. See further below, this Section *ad finem*.

Diels also identified a further chapter as being derived from an extraneous Stoic source, A 4.21, πόθεν αἰσθητικὴ γίνεται ἡ ψυχὴ καὶ τί αὐτῆς τὸ ἡγεμονικόν (‘From where comes the soul to be sentient, and what is its regent part’—S only has the second half of the heading and no lemmata), and so condemned it. But he was in two minds about its second lemma, because of the quality of its information.<sup>311</sup> We should observe that this chapter as to the themes treated is a doublet of the whole of 4.4 + 4.5 + 4.11–12 + 4.13 + 4.15–17 + 4.18. It deals first with Stoic views on the regent part as producing the presentations, assents, sense perceptions, and conations, then (in detail) with the other parts of the soul, coming back at the end to the regent part by noting that it is situated in our spherical head in the same way as (its regent part

<sup>311</sup> DG 178.

is situated) in the cosmos.<sup>312</sup> Like chs. 11–12 this chapter too has been added to provide more detailed and up-to-date information.

The three lemmata with the name labels Empedocles, Asclepiades, and Herophilus of ch. 4.22 περὶ ἀναπνοῆς ('On breathing') are very long, which as a rule for Diels implies an origin outside the *Placita* tradition.<sup>313</sup> Yet the chapter escaped Diels' censure and scissors because it exhibits a variety of the standard plurality of name-labels found in *Placita* chapters. The short chapter that follows, 4.23 Περὶ παθῶν σωματικῶν καὶ εἰ συναλγεῖ τοῦτοις ἢ ψυχῇ ('On bodily affections, and whether the soul feels pain in connection with these'),<sup>314</sup> with lemmata on Stoics Epicurus Strato, was preserved by him for the same reason. The heading of 4.22 is the same as the title of one of Aristotle's *Parva Naturalia*, and the first lemma of this chapter, name-label Empedocles, paraphrases both the famous fragment on the clepsydra quoted there (B100 DK) and Aristotle's account of Empedocles' theory of breathing, *Resp.* 7.473a15–474a24. The last clause of the lemma, as of course has been seen by Diels and others, in fact refers to this fragment: 'this brings the passage relating to the clepsydra to mind' (ὑπομνησκει δὲ τὸ ἐπὶ τῆς κλεψύδρας).

The final chapter pertains to a topic that is already important for Aristotle, who at the beginning of the *On the Soul*, 1.1.403a3–19, proves that the 'affections' (πάθη) of the soul are conjoined with those of the body, and conversely.<sup>315</sup>

Thus, chapters 4.21–23 when considered together fittingly form a sort of psychosomatic finale to the exposition of the doctrines concerned with the soul and the senses at 4.2–20. At the beginning of the next book they are followed by the psychosomatic chapters 5.1, 'On

<sup>312</sup> Diels suggests ἥλιος for the lacuna, but a repetition of 'regent part' is sufficient; ch. 2.4a\* is no help. Cf. A at P 1.6 (1.6.3 Diels), where the view that our intellect is situated in the head because the cosmos, too, is spherical is attributed to Plato. According to Phld. *Piet.* col. 9.9–15 (*DG* 549b9–15 ~ *SVF* 2.910) some dissident Stoics placed the regent part in the head; cited from Henrichs (1974). See Mansfeld (1990a) 3095 n. 145; references at Lachenaud (1993) 283 n. 4 are mistaken.

<sup>313</sup> Lachenaud (1993) 161 n. 1 guesses the chapter has been placed here, with the psychology rather than the physiology, because 'sans doute' the Stoics considered respiration to be a movement of the soul.

<sup>314</sup> S only has περὶ παθῶν.

<sup>315</sup> Useful note Lachenaud (1993) 164 n. 1; for parallels see also Tieleman (2003) 242, 278–280, and Tieleman (2007) 112–114 on Cleanthes *SVF* 1.518, Panaetius T 120 Alesse: proofs of the soul's corporeality, as at some length at Lucr. 3.136–176 and 459–510. For Aristotle see van der Eijk (1997).

divination', and 5.2, 'How dreams come to be', which could equally well have been placed at the end of Book IV but presumably have been shifted to the next book to achieve a smoother continuity. We observe that the first of these generalizes and in its third and last lemma in P echoes the theme and title of one of Aristotle's *Parva Naturalia*, the *Περὶ τῆς καθ' ὕπνον μαντικῆς* ('On divination during sleep'). The theme of the second, *πῶς ὄνειροι γίνονται* ('How dreams come to be'), echoes another of these mini-treatises, the *Περὶ ἐνυπνίων* (the subject is given as *περὶ ἐνυπνίου* in the first line, *Insomn.* 1.458a33); the title also appears as that of the fourth book of the Hippocratic treatise *De Victu*, and is cited as one of Strato's, D.L. 5.59; a tenet with name-label Strato occurs as the second lemma of A at P 5.2. The order of the *Placita* chapters is a variation of that of Aristotle's minor essays in physical philosophy. The heading of 5.2 has the word *ὄνειρος*, never used by Aristotle.

Accordingly, in A Book IV the topics have been largely set out in a sequence according to a Peripatetic pattern of treatment, which to a considerable extent is paralleled in Epicurean and, as we shall see, in Stoic accounts of these issues. The purely Stoic chapters that are interspersed help to make the exposition more up-to-date and useful. In this respect Book IV may be compared with Book I, where as we have seen in Section 8 an originally Peripatetic account of theoretical physics has been upgraded and made more wide-ranging in agreement with the model of the 'eidetic' subdivision of the Stoic *physikos logos*.

We can discuss only briefly the succession of topics treated in the remaining part of A Book V. This starts with ch. 5.2 (already cited above): 'How dreams come to be', and continues with chapters dealing with spermatology and embryology (in general paralleled in Aristotle's *Generation of Animals*) of which the first is 5.3, *τίς ἡ οὐσία τοῦ σπέρματος* ('What is the substance of semen'). We note 5.7, *πῶς ἄρρενα γεννᾶται καὶ θήλεα* ('How males and females are generated'), 5.8, *πῶς τέρατα γίνεται* ('How monsters come to be'), 5.11, *πόθεν γίνονται τῶν γονέων αἱ ὁμοιώσεις ἢ τῶν προγόνων* ('What is the cause of looking like parents or grandparents'), and 5.9, 5.13–14, on various causes of infertility or sterility.

This series of chapters, or topics, is paralleled in, at first sight, a somewhat haphazard succession of themes in Lucretius Book IV. That in Lucretius, too, dreams (in 4.962–1036) are followed by semen (4.1037–1057) is of special interest; the poet manages to connect these subjects with each other in an effective way because lines 4.1030–1036 are about pollution in erotic dreams. Why children resemble parents

or ancestors is treated in 4.1209–1226, causes of sex difference are in 4.1227–1232, and causes of sterility in 1233–1277. Piet Schrijvers has pointed out<sup>316</sup> that the order and contents of what he calls ‘biological topics’ in Lucretius Books III and IV, from the essence of soul, the senses, etc. to embryology and sterility, is indeed closely parallel to that of the *Placita*. He also points out that it is anticipated in the scholium to Epicurus’ *Letter to Herodotus*, *ap.* D.L. 10.66, which says that ‘elsewhere’ (i.e. a different work than the *Letter*) the rational part of the soul in the chest, the irrational part in the whole body, sleep, and finally semen were treated—in this order, as it would appear. He also notices the absence of a section on the sense of touch in Lucretius, though we note that at 4.233 the poet states that ‘touch and sight are moved by a like cause’ (tr. Smith). We have seen above that in P too a separate chapter on touch is lacking, and may add that in individual lemmata elsewhere in the *Placita* the five senses are listed in the proper way: A at P 4.4.4, the Stoics; at S 1.50.27, Pythagoras Plato; and at P 4.21, the Stoics. So in fact one would expect to find a chapter on touch in P. The separate chapter S 1.56 has the heading ‘On touch’, but as contents only AD fr. 17 Diels, 4th text, relating to Aristotle. In S’s chapter ‘On taste’, 1.55, comprising AD fr. 17 Diels, 3rd text, relating to Aristotle, plus two abstracts from the *Timaeus*, no Aëtian lemmata are extant, while P 4.18 ‘On taste’ has preserved two lemmata. Nevertheless the question remains: is Lucretius dependent on a doxography that like A lacked a chapter on touch? In textual criticism a shared lacuna is seen as a sign of shared ancestry. The point, of course, is that not only what we may call positive parallels such as a similar order and treatment of themes, but also that what we may call negative parallels, that is to say ingredients one would expect to be present in both cases but which, surprisingly, are both times absent, are important as well.

Following Solmsen, Schrijvers argues that the set of activities and properties in this Lucretian account of the soul exhibits an overall resemblance to Aristotle’s view of the soul as both cognitive, sentient and motive, and vegetative. He also argues that the Lucretian sequence corresponds with what an educated Roman contemporary would expect to find, with his ‘horizon of expectation’.<sup>317</sup> We believe that such a

<sup>316</sup> See next note.

<sup>317</sup> For Solmsen see (1961) at (1968) 629–630, for Schrijvers (1976) at (1999) 121–123, also on the *Erwartungshorizont* or ‘perception du lecteur’. Sedley (1998b) 150–152, citing Solmsen’s view that the psychic functions at Lucr. 4.26–1287 ‘are all functions

person would have belonged to a small elite. Solmsen's and Schrijvers' documentation should moreover be augmented by two further components.

The first of these is Stoic psychology. The Aristotelian and Epicurean/Lucretian soul is neatly paralleled by the Stoic soul, which as already noticed is divided into eight parts: the five senses, voice, reason, and last but not least the spermatic part, *SVF* 1. 143, 2.827–833. We have seen above, in Section 8, that the first part of the 'aetiological' subpart of the 'generic' subdivision of the Stoic *physikos logos*, shared by the philosophers with the doctors, deals successively with 'the soul, and with what goes on in the soul, and with semen and similar topics' (D.L. 7.133). This brief description exactly fits the sequence and main contents of A Books IV and V, and is parallel to the accounts of Lucretius and Epicurus. The phrase 'what goes on in the soul' pertains in particular to the cognitive chapters A 4.11–12, and helps explain why Stoic epistemology is found as part of the account of psychology as physics in the *Placita*.

Lucretius' sequence can therefore also be seen as confirming the tenacity and impact of the tradition. The noteworthy presence of medical doxai in A Books IV (six instances) and V (twenty-six instances), as compared with Books I to III (two instances in Book I)<sup>318</sup> is to a considerable extent to be explained as a consequence of Stoic theory and practice.

The second component to be added to the file is Aristotle's point that natural philosophy should, and in fact does, include a part of medicine, viz. the principal causes of health and disease, which are, as he explicitly says, (to be) discussed *ad finem*.<sup>319</sup> That the *last* section of physics is to include issues belonging with medicine further explains the presence of numerous medical doxai in the two final books of the *Placita*, and especially in the last book.

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of the *Aristotelian* soul' (his emphasis), argues that Lucretius follows Epicurus on the 'vital properties' the atoms lack, and (1998a) 351 toys with the attractive idea that Epicurus' order might have followed Theophrastus', but Schrijvers' point about the *Placita*, Epicurus, and (the influence of) Aristotle is equally interesting. Note however that even in the reprinted version of (1976) Schrijvers identifies A (or even P) with the *Vetusta Placita*, and also compares the sequence of topics in G (citing G's chapters according to the numbering and in the Latin translation of the headings of Vol. 19 of Kühn's Galen of 1830), apparently without realizing that this section of G belongs with G's epitome of P and so is practically worthless for comparative purposes.

<sup>318</sup> For these numbers see Runia (1999b) 211–212.

<sup>319</sup> See above, text to n. 226.

Equally important, we believe, gratefully taking up Schrijvers' suggestion, is that people who to some extent were familiar with philosophy would experience the succession of themes in Books IV and V of the *Placita* as quite unsurprising, even if some of them preferred the doctrines of one school of thought over those of another. Lucretius' treatment therefore also makes sense in a context of polemics and debate. Opponents one might wish to persuade are perhaps easier to convince (and, from an Epicurean point of view, to help) when main ingredients of doctrine are presented *grosso modo* in a standard order they already know. Crypto-syncretism again.

### 13. *Early Instances of ‘Doxographical’ Clusters*

*Summary.* We now look briefly at lists of principles in physics and their attributes that are to be dated before Aristotle and Plato, and discuss examples in a Hippocratic work and in Isocrates. It is important to recognize that collecting and arranging these items began at an early date. Brevity of expression is the norm, as later in Aristotle and the chapters of the *Placita*. In Isocrates we already have lists of principles arranged according to number; with hindsight we may find the category of quantity applied here. Though several ingredients of the doxographical technique of presentation are earlier, it is Aristotle’s methodology that is the watershed dividing what is in Isocrates, Plato and others from what is found in later works.

Several authors to be dated to the fifth–fourth centuries BCE, i.e. the period before Aristotle and Theophrastus, also cite and present philosophical tenets. They do so almost always in a manner that may rewardingly be compared with the organizational logic of the *Placita*. For they present such tenets in *clusters* that emphasize the range of similar options as well as the conflicts to be noted when one considers and compares views of a plurality of persons concerned with a specific topic. These views may be cited anonymously as in the Hippocratic example cited below, for as already noted in such circumstances it is the views that matter, but the name of the persons holding them (or supposedly holding them) may also be added, as in the Isocratean passages to be cited. What we find are lists that are made to serve a specific purpose, as can be seen from the manner in which their contents are presented and discussed. We cannot here study the available material in full, and so shall only quote a few brief overviews that may be put alongside the series of tenets in A’s chapter on the principles, 1.3.<sup>320</sup>

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<sup>320</sup> The evidence is studied in more detail in Mansfeld (1986b), arguing from Aristotle and Plato to Gorgias’ presentation of contrasting and Hippias’ of related views (for Hippias cf. below, n. 335), and also discussing e.g. Xenophon *Memorabilia* 1.1.14 and [Arist.] *De Melisso Xenophane Gorgia* 5.979a14–18 on Gorgias; further in Mansfeld (1990a) 3157–3161, esp. 3159–3160 on pre-Aristotelian examples. The overview and discussion of tenets concerned with the flooding of the Nile at Herodotus 2.20, of which the first



In the first chapter of the Hippocratic treatise *Nature of Man* (probably ca. 400 BCE) there is a brief list of monist views (no names) concerned with the principle or element: ‘one of them says this One-and-All is air, the other fire, another water, and another earth’ (λέγει δ’ αὐτέων ὁ μὲν τις φάσκων ἡέρα εἶναι τοῦτο τὸ ἐν τε καὶ τὸ πᾶν, ὁ δὲ πῦρ, ὁ δὲ ὕδωρ, ὁ δὲ γῆν). They cannot all be right, it is argued; in fact, all they achieve is ‘to uphold the argument of Melissus’ (τὸν δὲ Μελίσσου λόγον ὀρθοῦν). What this argument is we are not told here, but fortunately we do know what it is: yes, there is one thing which is one-and-all, but this is not ‘earth and water and air and fire and iron and gold’, Melissus fr. B8 DK. Melissus had listed the same elements except in a different order, and reduced the tenets of the targets of his critique to absurdity by adding iron and gold as elements, although of course these had never been proposed. Who these monists are we also know (though we are not so certain about earth), since these tenets, but then inclusive of name-labels, are also to be found in the overview of the *Placita* (A 1.3) and similar literature, and long before the *Placita*, of course, in Aristotle and Theophrastus.

In a work to be dated ca. 352 BCE, the *Antidosis*, Isocrates provides a list of six ‘tenets of the experts of some time ago’ (τοὺς λόγους τοὺς τῶν παλαιῶν σοφιστῶν), which are enumerated in a descending series according to number:<sup>321</sup>

One of them [who remains anonymous] said the quantity of really  
existing things (τὸ πλῆθος ... τῶν ὄντων)<sup>322</sup> is infinite,  
Empedocles four, and Strife and Love in them,  
Ion not more than three,  
Alcmeon only two,  
Parmenides and Melissus one,  
and Gorgias absolutely none.

There is no deep reason for this sequence. An ordered series of items is far easier to remember than a random one. Listing elements according

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three (no name-labels in the historian) also occur, in the same order but for the most part formulated differently, in A at P 4.1.1–3 (name-labels added), belong in this context too. Herodotus will depend on discussions by philosophers and sophists.

<sup>321</sup> *Antid.* 268.

<sup>322</sup> The earlier texts have ὄντα where Aristotle and others say ‘principles’, or ‘elements’: cf. Plato, *Sph.* 242c, and Arist. *Phys.* 1.2.184b22–25; on the latter passage see, e.g., Mansfeld (1986b) 8–9. For the tradition regarding Aristotle’s contacts with Isocrates see Düring (1957) 299–314, and now Blank (2007) 16–22, 26–27; there is no evidence that Aristotle knew Isocrates’ lists of principles, but in our view it is likely that he had seen them, as he will have seen those of others beside Plato.

to the sequence of the natural numbers has the obvious advantage of distributing them over a grid one already knows. The designation ‘infinite quantity’ is remembered as an extra that so to speak is *hors série*. The practice followed by Isocrates is at home in a culture that is still partly oral, but as we see it is also quite practical in a written context.

It is sometimes affirmed that Plato’s similar though much more elaborate and literary account at *Sophist* 242c–243a was his source, but Isocrates’ list contains ingredients not paralleled in Plato’s. The two men depend on a shared tradition. Plato’s list lacks the infinitists at the beginning and the nihilist at the end; Isocrates cannot have derived his information about these two positions from Plato. Isocrates is explicit about quantity (πλήθος), anticipating Aristotle’s category. Plato speaks of both ‘how many and what they (i.e., the ὄντα) are’ (*Sph.* 242c, πόσα τε καὶ ποῖά), thus anticipating the two main categories of Aristotle’s divisions of the elements and principles.

In an earlier work of Isocrates, the *Helen*, to be dated to ca. 385 BCE, the list is presented in an abridged form (less items, viz. only Melissus, Gorgias, plus the anonymous view concerned with infinity), and now in ascending order according to number, but also contains an item (viz. Zeno)<sup>323</sup> not to be found in the later work.<sup>324</sup>

Who would be able to do better than Gorgias, who ventured to say that none of the really existing things is,

or than Zeno, who tried to establish that the same things are possible and again impossible,

or than Melissus, who, although the number of things is infinite [cf. the first position at *Ant.* 268], tried to find proofs that the All is one?

Xenophon too knew about the contrasting views of the ‘sophists’. At *Memorabilia* 1.1.14 he tells us that some of these people believe that there is only one thing, others that there are infinitely many things. Some believe that things are always moving, others that they never move. Some believe that all things come to be and pass away, others that nothing ever comes to be or perishes.

<sup>323</sup> Zeno of Elea more properly belongs with the absurd (Antisthenian) tenets and with Protagoras and the Sophists (‘experts’) of Protagoras’ days strongly criticized *Hel.* 1–2, which sets the tone also for the barbs directed against Gorgias and Melissus. On the proem as a whole see Zajonz (2002) 79–97, who however fails to cite the parallel for Melissus’ tenet at *Antid.* §268, and seems to be unaware of the doxographical ramifications.

<sup>324</sup> *Hel.* 3.

The tenets listed in these early examples illustrate each other. This interrelation preludes upon the interrelations characteristic of the microcontext of most Aëtian chapters. The brevity of these phrases, especially in the *Antidosis* passage where Isocrates adds name-labels, is very much like that of such tenets as collected in the *Placita*. In Isocrates the *verbum dicendi*, or a verbal form with a similar function, pertains to the whole series, just as is often the case in the *Placita*. In cases like these the term abridgement is not good enough as a designation of such extremely concise paraphrastic formulas; 'summary' would be better. Take the Isocratean reference to Empedocles. We know enough original Empedoclean lines to realize the extent of the text that has been 'abridged', or rather summarized; the reader will forgive us for not quoting them.

Thus, although several ingredients of the doxographical technique of presentation as we see are earlier, we must insist that Aristotle's methodology is the watershed dividing what is in Isocrates, Plato, & *alii* from what is found in later works.

#### 14. *Problems and Excerpts: Aristotelian Instructions and a Bit of Practice*

*Summary.* In *Topics*, 1.14 Aristotle gives instructions on how to select and collect logical, ethical, or physical statements and doxai for use in debate between persons. One should among other things consult the relevant literature, make lists of statements and views under specific headings, and begin each time with the category of substance. Titles of such collections are extant in the catalogues of his works. We observe, as others have done, that he also uses this expertise to set up a *status quaestionis* in a treatise, often playing off the views of experts against each other. Plato already informs us about the collecting of excerpts of an ethical nature, and about the need to bring key passages together under the same heading. Hippias is known as the author of an anthology of views taken from both poets and scientists. Aristotle is not the inventor of doxography, but he certainly bequeathed it with a well-founded technical procedure, and considerably widened its scope. The categories, the method of diaeresis, and the four types of question crucial to scientific investigation all served to organize the material to be studied and the problems to be solved. Substances are carefully distinguished from their attributes but also firmly linked to them. In addition, the inquiry into causes and connections provides our knowledge of reality with consistency and structure. From a formal point of view problems formulated in the context of dialectical debate and issues present in scientific inquiry overlap. We cite examples from Aristotle's works and from the *Placita*, and recall the proem of the latter with its emphasis on problem-oriented physics.

Because the Aristotelian procedures and their reverberations have several times been dealt with in earlier publications,<sup>325</sup> we can afford to be brief and selective. In the *Topics* Aristotle gives advice and instructions to people who are to oppose each other in a debate. It is essential to be informed about what others are saying or have said or written about issues that may come up, and also important to think of what one might contribute oneself. Views that have been put in writing and therefore constitute a fixed body of opinion are an important part of what may be at someone's disposal.<sup>326</sup> Anyway, the reader or listener is advised

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<sup>325</sup> See below, n. 327 *ad fin.*

<sup>326</sup> See e.g. Aristotle's references to the *Gorgias*, the *Phaedo*, the *Republic*, the *Timaeus*,

to collect and *classify* the assertions (*protaseis*), or problems (*problēmata*), which one should be able to make use of when playing one's role in the debate.<sup>327</sup> We translate parts of the text describing this taxonomy:<sup>328</sup>

Statements should be selected (ἐκλεκτέον) in as many ways as we drew distinctions in regard to the statement. Thus one may select the *tenets* (δόξας) held by all, or by the majority, or by the *experts* (τῶν σοφῶν).<sup>329</sup> [...]

We should also make selections from the relevant *literature* (ἐκ τῶν γεγραμμένων λόγων) and put these in separate *lists* (διαγραφάς) concerned with every genus, putting them down *under separate headings* (ὑποτιθέντας χωρίς), for instance about the good, or about the living being—and that is to say about the good as a whole, *beginning with the: What is it?* [i.e. the category of substance]<sup>330</sup>

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and Empedocles and the *Timaeus*: *SE* 12.173a7–8 ὥσπερ καὶ ὁ Καλλικλῆς ἐν τῷ Γοργία γέγραπται λέγων, *Met.* 2.2.355b32–33 τὸ δ' ἐν τῷ Φαίδωνι γεγραμμένον, *Pol.* 2.1.1261a8–9 κατὰ τὸν ἐν τῇ Πολιτείᾳ γεγραμμένον νόμον, *Phys.* 4.2.210a1–2 ὥσπερ ἐν τῷ Τιμαίῳ γέγραπεν, *Cael.* 2.13.293b32 ὥσπερ ἐν τῷ Τιμαίῳ γέγραπται, 3.2.300b17 and 3.7.306b18–19 καθάπερ ἐν τῷ Τιμαίῳ γέγραπται, 4.2.308b4–5 ὥσπερ ἐν τῷ Τιμαίῳ τυγχάνει γεγραμμένον, *GC* 1.8.325b24–25 ὥσπερ ἐν τῷ Τιμαίῳ γέγραφε Πλάτων, 2.1.329a13–14 ὡς δ' ἐν τῷ Τιμαίῳ γέγραπται, *Resp.* 5.472b6 ἡ δ' ἐν τῷ Τιμαίῳ γεγραμμένη περίωσις, *Sens.* 2.437b11–12 καθάπερ Ἐμπεδοκλῆς φησὶ καὶ ἐν τῷ Τιμαίῳ γέγραπται.

<sup>327</sup> See e.g. Pacius (1597) 360, 'ut habeamus promptuarium quoddam, ex quo tamquam ex penu, possimus de quacumque re proposita depromere idoneas propositiones'; Throm (1932) 69, 'Man soll sich also einen regelrechten Zettelkasten anlegen, natürlich für praktische Verwertung'; Moraux (1951) 71–72, on the 'recueils de propositions' (see below, n. 338) in relation to the prescriptions in *Top.* 1.14; Düring (1966) 226–227 with n. 295, who comments 'Man muss voraussetzen, dass er durch Lektüre ein reiches Material gesammelt hat', and who translates *διαγραφαί* as 'Verzeichnisse' and *παραιομαίνεσθαι* as 'notieren'; Düring (1968) 203, '[I]n 105b2–18 he recommends a method which he later used for his doxographical surveys'. Also the remarks of Zadro (1974) 343 *ad loc.* (and 340 *ad* 104b20–22; *ad* 105b13–18, '[t]roviamo qui la traccia di quelle che saranno poi le opere dossografiche'). See further Mansfeld (1986b) 25–26, (1990a) 3200–3202, (1992a) 70–76, (1999b) 28–30, and (2004), where the passage quoted from *Top.* 1.14 is interpreted in relation to the methodology of the *Placita*.

<sup>328</sup> *Top.* 1.14.105a34–b25.

<sup>329</sup> For 'all, the majority, or the experts' compare the famous formula *Top.* 1.10.104a8–10 (repeated at the beginning of the chapter, *Top.* 1.14.105a36–37), 'a dialectical statement is the asking of something accepted by everyone or the majority or the experts (either all of the experts or the majority or the most well-known of them)'. We may note that this is a tripartite diaeresis, of which the third part, or species, is again divided into three. Cf. below, n. 330a and text thereto.

<sup>330</sup> See *EE* 1.8.1217b25–33, 'The "good" has many senses, as many as "being". For being, as we have divided [διήρηται—cf. above, n. 289 and text thereto] it elsewhere, signifies either what something is, or the quality, or the quantity, or time, and furthermore moving/changing and being moved/changed [i.e. doing and being-affected]. The "good" too is found in each of these modes: in substance it is mind and God, in quality justice, in quantity moderation, in time opportunity, while in moving/changing and

One should moreover *note separately the doxai of individuals* (παράσημαίνεσθαι δὲ καὶ τὰς ἐκάστων δόξας), e.g. that *Empedocles* [representing expert opinion, i.e. of the above-mentioned σοφοί] *said that the elements of bodies are four* (ὅτι Ἐμπεδοκλῆς τέτταρα ἔφησε τῶν σωμάτων στοιχεῖα εἶναι). [...]

Of statements and problems there are, roughly speaking, three parts [μέρη]:<sup>330a</sup> for some are ethical, others physical, and others logical. Ethical are such as e.g. whether one should rather obey one's parents or the law, if they disagree,<sup>331</sup> logical e.g. whether the knowledge of opposites is the same or not,<sup>332</sup> physical e.g. whether the cosmos is eternal or not [cf. A 2.4].<sup>333</sup> The same holds for problems. [Italics added]

At first sight the poetry of Empedocles perhaps fails to qualify as *gegrammenos logos*, for this expression in the first place applies to prose writings. But then we recall that Aristotle said Empedocles only shares the meter with Homer, so we should call him 'a physicist rather than a poet' (*Po.* 1447b17–20).

Statements (or propositions) and problems may thus be exemplified and illustrated by, or by means of, opinions, tenets, δόξαι; accordingly, as there are three classes of statements and problems, so there are three classes of doxai: ethical, physical, and logical. Aristotle's definition and example of a *physikḗ doxa* explain the title and purpose of Theophrastus' lost treatise: *Physikai Doxai*, i.e. '*Physical Tenets*'.<sup>334</sup> From Aristotle's

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being moved/changed we have teaching and being taught'. Parallel to *EE* 1.8.1217b25–33 are *EN* 1.6.1096a23–27, which also lists the "good" in the categories of relation ('the useful') and place ('regimen etc.'), and *Top.* 1.15.107a5–11, on the "good" in the categories of doing, quality, time, and quantity. 'Elsewhere': Dirlmeier (1984) 199–200 *ad loc.* refers to the lost *Διαρρέσεις* in 17 books (*D.L.* 5.23; no. 42 Goulet (1989) 426); a *Διαρρέσεις* in 27 books is listed in the catalogue of Ptolemy-el-Garib, believed to derive from the *Pinakes* of Andronicus of Rhodes (no. 57 Hein (1985) 429 ~ no. 59 Goulet (1989) 433). Examples of similar divisions can be found by looking up λέγεται πολλαχῶς *vel. sim.* in Aristotle.

<sup>330a</sup> A tripartite division, cf. above, n. 329 and text thereto. Alex.Aphrod. in *Top.* 93.27 comments: μέρη γὰρ ἀντὶ τοῦ εἶδη.

<sup>331</sup> πότερον δεῖ τοῖς γονεῦσι μᾶλλον ἢ τοῖς νόμοις πειθαρχεῖν, ἐὰν διαφωνῶσιν.

<sup>332</sup> πότερον τῶν ἐναντίων ἢ αὐτῇ ἐπιστήμῃ ἢ οὐ, well-known Aristotelian phrase, e.g. *Top.* 1.10.104a15–16, *APr.* 1.3648b4–5, *Phys.* 8.1.251a30, *An.* 3.3.427b6, *EN* 5.1.1129a13–14.

<sup>333</sup> πότερον ὁ κόσμος αἰδῖος ἢ οὐ, cf. e.g. *Arist. Top.* 1.11.104b8 and below, n. 352.

<sup>334</sup> For δόξαι in dialectical settings in Aristotle see e.g. *Met.* A 3.983b33–984a2, *An.* 1.2.403b21–24 (physical); *EN* 1.4.1096a17 (ethical). Theophrastus' title is not Φυσικῶν δόξαι as Usener and Diels believed, followed by many, but Φυσικαὶ Δόξαι. For this issue see Mansfeld (1990a) 3057–3058 n. 1, (1992a) 64–65, (1993b) 312 with footnotes, *ibid.* 359–361, (2002b) 279–280, where examples of φυσικὴ δόξα and φυσικὸν δόγμα and

examples of doxai in the various fields of inquiry it is clear that such tenets are to be formulated with lapidary brevity. One should moreover compare his backward reference to the historical chapters 3–6 on the principles of the first book of *Metaphysics* at the beginning of ch. 7: ‘our account ... has been concise and limited to key issues’ (988a18, συντόμως ... καὶ κεφαλαιωδῶς ἐπεληλύθαμεν).

Our *Topics* passage is not the first in Greek literature where one is instructed *disertis verbis* to take notes and to make excerpts from the literature. In Plato’s *Laws* (7.811a, 811e) we are told of a system of education by means of key passages (κεφάλαια, see below, Section 16) excerpted from the poets, by ‘bringing together complete’ (i.e. sufficiently independent) ‘passages under the same heading’ (τινας ὅλας ῥήσεις εἰς ταῦτὸν συναγαγόντες), which are to be learned by heart. Without doubt gnomologia are meant. The Guardian of the Laws in charge of education, when going through prose writings or poetry, or when hearing (of) a simple exposition which has not been written down, should like-

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comparable expressions are cited; add Heraclitus *All.* 22.2, ‘les notions de physique sur les éléments, Homère en est l’initiateur, et Homère seul’ tr. Buffière (καὶ τῶν φυσικῶν κατὰ τὰ στοιχεῖα δογμάτων εἰς ἀρχηγὸς Ὅμηρος). For the adjective with various substantives cf. Bonitz *v.* φυσικός, 835a28–35, and esp. Arist. *GC* 1.2.316a13 φυσικοῖς λόγοις, ‘arguments of a physical kind’, and *Rhet.* 1358a19–20, περὶ φυσικῶν ... προτάσεις, ‘propositions about physics’. At Eusebius *PE* 15.62.7 and 12 (~ *SVF* 1.353) the formulas τοὺς ... περὶ τῆς φύσεως λόγους and τοὺς φυσικοὺς λόγους (for the latter cf. e.g. Phld. *Piet.* col. 9.29–10.3 ~ *SVF* 2.910, Plu. *Per.* 6.1, *SR* 1035D) are equivalent. Also cf. D.L. 7.160 (~ *SVF* 1.351) φυσικός τόπος for physics as part of philosophy. The words δόξαι and δόγματα can be used interchangeably, see e.g. Alex.Aphr. *Fat.* 164.21–165.1, and above, n. 19 and text thereto. Seneca, *Ep.* 95.10, says that what the Greeks call *dogmata* the Latins may call *decreta* ... *vel scita vel placita* (!), cf. above, n. 20. Zhmud (2006) 133 n. 65 knows a distinction between ‘natural’ and ‘physical opinion’, but does not tell what it is. Note that the title for Theophrastus’ work used by e.g. Zeller (1880) 227, Wilamowitz (1881) 89, Festugière (1949) 360, and Löbl (1976) 46–47, is Φυσικαὶ Δόξαι. Taurus’ quotation in the verbatim fragment of his *Commentary on the Timaeus ap.* Phlp. *Adv.Procl.* 145.20–21 Rabe, Περὶ τῶν Φυσικῶν Δοξῶν, the only one apart from the sixteen books of Φυσικῶν Δοξῶν in the catalogue at D.L. 5.48 (~ Thphr. fr. 137 no. 6b and 241A FHS&G ~ *Phys.Op.* fr. 11 Diels) can only be translated as ‘On the Physical Tenets’ or ‘Opinions’, see Mansfeld (1992a) 65–66, 110, just as is the case for πασῶν σχεδὸν τῶν φυσικῶν δοξῶν at Gal. *in Nat.Hom.* 15.50.5–8 K. For the title and its interpretation see also Sedley (1998b) 179, Mejer (2002) 251–252, 258; compare Φυσικὴ Ἀκρόασις, Αἰτία Φυσικαί, Ζητήματα or Προβλήματα Φυσικά, or Seneca’s title *Naturales Quaestiones*, a verbatim translation of Chrysippus’ Φυσικαὶ Θέσεις (Plu. *SR* 1035CD ~ *SVF* 3.86, cf. above, n. 225); for such titles see Hine (1981) 27–29. For *naturales quaestiones* not as a book title but as the subject-matter of θέσεις cf. Cic. *Part.* 64, Quintilian *Inst.* 7.2.6–7; cf. also Sen. *Ep.* 88.24.

wise take care when coming across something important, and *write these things down* (γράφεισθαι) so that they can be used by the pedagogues. Plato's ideal situation is fictional, while Aristotle prescribes a real activity for his pupils, and describes one he practised himself. We note that presumably in the anthologies referred to as examples and recommended by Plato only what we (with some latitude) may call ethical doxai were collected. But an anthology of which the existence and author as well as a summary of contents are known, contained extracts not only from poets and prose writers in general, but also from people like Thales: Hippias' collection of 'most important and related utterances' (μέγιστα καὶ ὁμόφυλα, fr. B6 DK). So Hippias' collection will have contained a smattering of physical doxai. Of no less importance is the fact that Plato's κεφάλαια parallel Hippias' μέγιστα, and Hippias' ὁμόφυλα Plato's εἰς ταὐτό.<sup>335</sup>

Making excerpts and noting them down must have been fairly common practice. The author of the text which has been partly and accidentally preserved in the *Derveni Papyrus* for instance excerpted and copied an Orphic poem and the book of Heraclitus. It is not so easy, however, to classify the doxai gathered as a result of this man's activity as either exclusively ethical or exclusively physical.

The scope of the works as well as the suggestions of his predecessors is widened by the three kinds of doxai that Aristotle wants to be excerpted, written down, and collected. It is also to some extent given a different purpose, since dialectical training and scientific inquiry, though *more aristotelico* important for the development of character, are more neutral than the moral lessons adduced and prescribed by Plato.

The Aristotelian invention of a concept of 'categories', whose application is often conjoined with a consistent use of the technique of diaeresis, naturally entails a further substantial broadening as well as refinement and variation of scope. In the *Topics* chapter, as we saw, one is advised to classify doxai as to the subject at issue under headings of

<sup>335</sup> For the Plato passage in context see Barns (1951) 9; we translate ῥήσεις as 'passages', though the term at *Resp.* 393b (certainly) and *Phdr.* 268c (probably) means 'speech'; it came to mean 'quoted passage', 'quotation', as often in Galen's *PHP*, e.g. 2.5.24, 3.1.16, and the phrase quoted below, text after n. 385. On the role in education of excerpting gnomonic sayings see e.g. Barns (1950–1951) passim, Crihiore (1996) 44–45, but it is, *pace* Bompaigne (1958) 379, false to state the monocausal claim that 'le goût des citations est ... d'origine scolaire', see below, n. 430. On Hippias see Snell (1944), Classen (1965), Mansfeld (1986b) 1–7, Patzer (1986) who however includes passages dealing with disagreement among the experts, and Frede (2004) 31–33. Cf. also above, n. 320.



the 'on the  $x$ ' type, and as to the *category*, or aspect, according to which this subject is to be investigated and discussed. For according to Aristotle it is of major importance to establish to what category (substance, or quality, or quantity, or place, etc.) the object of inquiry and its attributes belong. Nevertheless we may notice that Aristotle so to speak formalizes and institutionalizes practices that had long been current, viz. the inventorization of the 'things that are' according to character, number, and motion versus rest, already found for instance in Isocrates, a Hippocratic writer, and Xenophon, as we have observed in the previous Section, and by the systematic use of the diaeretic method, made famous by Plato but also used as a matter of course by others, e.g. in the rhetorical *Technê* of Anaximenes.<sup>336</sup>

Notes must also be taken because, one imagines, there were simply too many slightly and not so slightly differing tenets and views about too vast a variety of topics to be remembered correctly in even this semi-oral environment, although the concise form of a large number of them, and especially the terse wording of tenets in cosmology and meteorology, should make it easier to commit at least the most important and more bizarre among them to memory. Information gathered in preparation for an oral debate had of course better be memorized. We can anyway be sure that many doxai were readily available to those persons with trained memories (far better than ours), who were familiar with the literature (either at first or at second etc. hand), and/or with the discussions that were going on, just as in later times those who, like Galen, had studied original treatises as well as secondary doxographical literature did not need to consult their handbooks each time they wanted to discuss a particular topic, though it always remained possible to refresh one's memory. One's acquaintance with an original work helps to remember brief summarizing formulas which one has written down oneself, or already found available in existing collections of this sort of material (like the lost collection of Hippias).<sup>337</sup> What is noteworthy is the meshing of written evidence and oral performance according to Aristotle's prescription and practice in the *Topics*. The material used in the debate includes abstracts from the written literature.

<sup>336</sup> On Anaximenes Rhetor see Fuhrmann (1960) 17. Plato favoured bipartite diaeresis, but this was by no means common practice; at *Phlb.* 16d–e, moreover, he recommends division into 'three or another number'. See further above, nn. 5, 46, 111, 201, 289, below, nn. 330, 340, and text to these notes.

<sup>337</sup> For the oral background of enumerations according to number in Isocrates see above, text after n. 322.

A Hellenistic catalogue of Aristotle's works lists the titles of six collections of propositions dealing with different species of statements. These Aristotelian collections are the result of activities such as those recommended in the *Topics* passage (1.14) translated above, and not the γεγραμμένοι λόγοι to be excerpted; to judge from their titles they belong with a specific genus, or rather species, such as those listed in the *Topics* chapter.<sup>338</sup> The prescription to make excerpts and collect views, and to order them under generic headings—or specific headings, for genus and species are relational terms—, becomes largely superfluous when ordered collections are readily available, though naturally one can go on collecting material.

In our present context we are mainly interested in the tenets of experts such as Empedocles, and in the fact that views of individuals are to be collected. Aristotle's 'topical' illustration of expert opinion in physics in relation to the categories of substance and quantity for instance is used by him at the end of the famous preliminary discussion, in the third chapter of *Metaphysics* A, of the series of material elements, including names of physicists, which becomes quite telegraphic near its end<sup>339</sup> (thus resembling the lists of Isocrates and the Hippocratic author quoted in the previous Section), viz. at *Met.* A 3.984a8, 'and Empedocles the four', Ἐμπεδοκλῆς δὲ τὰ τέτταρα. This discussion shows to what eminent purposes lists may be employed. The formula for Empedocles then turns up in Theophrastus, fr. 227A FHS&G ~ *Phys.Op.* fr. 3 Diels *ap. Simp. in Phys.* 25.21–22, 'this person makes the corporeal ele-

<sup>338</sup> See D.L. 5.23, as no. 34 *Propositions on Virtue*, an ethical species; no. 45 *Propositions on Motion*, a physical species; no. 46 *Eristic Propositions*, a logical species; 5.24 no. 67 *Propositions on Lust*, an ethical species again, no. 68 (*Propositions*) *on the Voluntary*, and no. 69 (*Propositions*) *on the Good*, the ethical species mentioned *Top.* 1.14.105b14. All these collections, on which see Moraux (1951) 71–72, 86, 92–93 n. 227, 94, and Goulet (1989) 426–427 as well as the translation of M. Narcy in Goulet-Cazé (1999), who differ as to some of these titles, are lost. We follow the text of Marcovich. The catalogue of Ptolemy el-Garib cites large collections, also lost: as no. 88 προτάσεις λγ' and as no. 89 προτάσεις ζ', according to the rendering into Greek of the Arabic text in Hein (1985) 435; see also Düring (1957) 229, Goulet (1989) 434, nos. 84–85. These προτάσεις in several books in the later catalogue may be combinations of works in the earlier one. The original Aristotelian *Problemata* are also lost, but we do at least have a Peripatetic collection. As a parallel for science note *Met.* E 1.1025b7–8: all reasoning disciplines are concerned with 'some particular being, i.e. some genus' (ὅν τι καὶ γένος τι).

<sup>339</sup> The passage about Thales and the origin of physics in ch. 3 is not brief; then we get a short list *Met.* A 3.984a2–16: Thales and Hippo water, Anaximenes and Diogenes air, Hippasus and Heraclitus fire, Empedocles the four, adding earth as fourth; Anaxagoras infinitely many homoeomerics: arrangement according to quantity and substance.

ments four' (οὗτος δὲ τὰ μὲν σωματικὰ στοιχεῖα ποιεῖ τέτταρα κτλ.), and it occurs also in the chapter on the principles and elements of the *Placita*, A at P 1.3.10, 'Empedocles says four elements' (Ἐμπεδοκλῆς [...] τέτταρα μὲν λέγει στοιχεῖα κτλ.). We have seen that it is anticipated at Isocrates *Antidosis* 268, 'and Empedocles: four' (Ἐμπεδοκλῆς δὲ τέτταρα κτλ.). One is tempted to compare 'four-elements-Empedocles' with expressions of oral fame such as 'swiftfooted-Achilles', or the 'one-speech-Hamilton' one hears of in Boswell's *Life of Johnson*. The Empedocles item and the list to which it belongs cannot have been too hard to memorize and remember.

A good example of Aristotle's use of this technique for a serious purpose is the foundational diaeresis, at *Phys.* 1.2.184b15–22, of the elements and principles of the physicists by number (category of quantity), by substance (air, water), and according to the distinction between the attributes moving and motionless (locomotion and change, so the categories of place and of doing and being-affected). The first to be listed, Parmenides and Melissus, are mentioned by name, but the physicist monists that follow remain nameless. They are distinguished among themselves merely as 'some' from 'others', but can be identified by us (and presumably by Aristotle's audience) because of the nature of their principles. Representatives of finitist pluralism are listed next, but anonymously; only numbers of principles (2, 3, 4) are given. Two types of infinitist pluralist come last; only the first is identified: Democritus. One can only admire the economy of this short account: names are used where leaving them out would make it more difficult for us to follow what is said, or perhaps even cause us to lose interest.<sup>340</sup>

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<sup>340</sup> See Gilbert (1909) and e.g. Mansfeld (1986b), 8–11, (1992a) 75; cf. also above, text to n. 49. Gal. *Elem.* 2, p. 58.7–10 De Lacy provides a descendant of this diaeresis: 'first we set out a division (διελέσθαι; De L. translates 'we must determine', which misses the point) to see whether the element is one thing in form, or many [category of quantity], and varied and dissimilar [categories of substance and quality]; secondly, if they are many and varied and dissimilar, how many there are [category of quantity], and what they are [category of substance], and of what quality [ὅποια, category of quality], and how they are in relation to their commonality [ὅπως ἔχοντα, category of doing/being affected]'. De Lacy (1996) 162, *ad loc.*, argues that this list 'appears to draw on both Stoic and Aristotelian lists of categories', ὅποια in his view being both Aristotelian and Stoic, ὅπως ἔχοντα Stoic. The reference to Stoic terminology is unnecessary but acceptable, but *pace* De Lacy the final category is not exclusively Stoic. Parallels for such lists in Galen and Celsus at De Lacy (1984) 3:627. For Philoponus see above, text to n. 16, for Sextus above, n. 111.

Influence or dependence or reception or by whatever name you want to call it is not merely a matter of content, but also, and not less importantly, of form, or rather organizing logic. One can prove that Aristotle's recommended procedure, viz. to subdivide a field into topics (genera, species) and then to start with questions concerning the category of substance in each topic *περὶ τοῦ δεῖνα*, noting down the views of individual experts, decisively influenced the *Placita* literature because the *categories*, by a remarkable *actio in distans*, determinen the macrostructure or macrocontext, that is to say the lay-out of entire and quite large sequences of chapters (containing collections of named tenets) in P or A. We have encountered quite a few examples in the course of the present investigation. Briefly summarizing this inquiry, chs. 2–7 in Book IV are concerned with what the soul is (category of substance), the number of its parts (quantity), the substance and location (category of place) of its regent part, the soul's motion (change, categories of doing and being-affected), and the issue of its immortality (time), name-labels of experts being added throughout. The chapter series in Book II dealing with the cosmos, the heaven, the stars, the sun, and the moon,<sup>341</sup> and the series in Book III dealing with the earth are also each time for the most part arranged in categorical sequence. We should however acknowledge that such staunch, elaborate, and slightly tedious successions of detailed views according to the categories are not to be found in Aristotle's own works. Whether or not Theophrastus' lost *Physikai Doxai* was constructed according to this categorical design is impossible to say. The divisions in the *De Sensibus* are set out according to the categories of doing and being-affected, quantity, and place.<sup>342</sup>

Another passage of methodological import with regard to physics is found in a strategic position in the first chapter of Book III of the *On the Heavens*.<sup>343</sup> Aristotle divides the things that are called 'natural'

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<sup>341</sup> This aspect of the presentational sequence is discussed at the beginning of each of these chapters in Part II, Spec. Rec.

<sup>342</sup> Mansfeld (1996) 169–188, also for references to the literature.

<sup>343</sup> Cf. above, text to n. 94, n. 108 and text thereto. See also the last chapter of *Cael.* Book III, 8.307b18–23, where Aristotle says that in the case of the elements differences in properties, functions and powers are more important than differences in shape. As Simp. in *Cael.* 552.22–32 points out *ad loc.*, *Cael.* 3.1.298a27–b6 repeats much of the proem of the whole treatise, 268a1–7, but clarifies the meaning of 'physical substance' and of 'functions and attributes'. For the phraseology cf. also *An.* 1.1.403a10–11, 403b11–12, 1.4.408a4, 1.5.409b15–16, on the functions and properties of soul. The literal translation of *ἐργα καὶ πάθη* is 'doings and affections'.

into ‘substances on the one hand, and the functions and properties of substances on the other’ (τὰ μὲν ἔστιν οὐσίαι, τὰ δ’ ἔργα καὶ πάθη τούτων):<sup>344</sup>

The word ‘natural’ is applied on the one hand to substances and on the other to functions and attributes of substances.

I call substances the simple bodies, such as fire and earth and those coordinate with these, and what is composed of them: the world as a whole and its parts, and again the animals and plants and their parts;

and (I call) functions and attributes the [a] movements (κινήσεις) of each of these substances, and of the others of which these are the causes by virtue of their own power, and further [b][c] the alterations and [d] changes into each other.

‘The elements, the world as a whole and its parts, and the animals and plants and their parts’—what is summed up in this phrase corresponds to what is treated in A Books I ch. 3 and II–V and listed in the proem of the *Meteorology*. Events or states of affairs connected with substances are identified in this passage as functions and attributes,<sup>345</sup> which are properties conducive to change. ἔργα and πάθη: apparently the categories of doing and being-affected can be used without immediately taking other categories into account. These conditions and events include the three species of motion according to what seems to be Aristotle’s standard view (see e.g. *Phys.* 5.1), viz. [a] motion in the category of place, both self-movement and being moved by something else; [b] qualitative change, e.g. in temperature; and [c] quantitative change, i.e. growth and decay. They also include [d] coming to be and passing away, or motion (in the sense of change) in the category of substance, included by Aristotle as the first species of motion at *Phys.* 3.1.<sup>346</sup> This grouping of coming to be and passing away and of motion and change under the canopy of the ἔργα and πάθη of natural substances allows one to dis-

<sup>344</sup> Arist. *Cael.* 3.1.298a27–b1.

<sup>345</sup> Cf. *Cael.* 1.7.275b5–6; Guthrie *ad loc.* notes the precedent at Plato *Sph.* 247d. See esp. *Phdr.* 270c–271b, with comments Mansfeld (1980) 348–354.

<sup>346</sup> Simp. in *Phys.* 801.3–13 discusses the difference between *Phys.* 3.1 and 5.1. Change in the categories of place, quantity, quality, and substance is briefly mentioned Arist. *Met.* H 1.1042a32–b2. Theophrastus argued for motion/change in every category; see the verbatim quotations from Books II and III of his *On Motion ap.* Simp. in *Phys.* 412.31–13.9 ~ fr. 153b FHS&G (also cf. fr. 153c FHS&G). So not only one of Aristotle’s positions but also that of Theophrastus could be included in that of the τινες who at S 1.19.1 (1.23.4 Diels) ‘introduce a fourth species of motion, namely one relating to substance, i.e. coming to be’ [plus its opposite] (οἱ καὶ τέταρτον εἶδος εἰσάγουσι, τὸ κατ’ οὐσίαν, ὅπερ ἐστὶ τὸ κατὰ γένεσιν).

cuss in an orderly fashion a wide spectrum of natural phenomena, for instance from the substance and trajectories of the heavenly bodies to their influence on the seasons and on the cycles of generation, or from the immobility of the earth to earthquakes.

For doing and being-affected in relation to the predecessors, as in the *Placita*, and for Aristotle's own considered view see his *On Generation and Corruption* 1.7–9. As a further instance of the application of these designations to early physicists we may cite Aristotle on the Pythagoreans as metaphysicians *malgré eux* and quasi-physicists:<sup>347</sup>

they get their principles from non-sensible things; yet their discussions and investigations are all about nature; for they generate the universe,<sup>348</sup> and they observe what comes about with regard to its parts and attributes and functions.

The words ἔργον and πάθος (πάθος meaning 'attribute', 'effect', etc.) do occur in the *Placita*, the former only a few times, the latter rather often, but they are never found together. The lemmata in which πάθος is found are for the most part meteorological, see Diels' index *sub voce*.

Further Aristotelian rules which not only determined his own investigations but also influenced characteristic aspects of the layout of the *Placita* (and numerous other authors) are found in the first chapter of the second book of the *Posterior Analytics*:

we seek four things: the that [τὸ ὅτι, the fact], the why [τὸ διότι, cause], if it is [εἰ ἔστι, existence], what it is [τί ἔστι, substance/definition].<sup>349</sup>

The last of these four types of question coincides in the first place with the category of substance, of whose role in the presentational logic of the *Placita* we have already spoken, but the what-is-it-question may also be put in regard of the other categories. The 'fact' pertains to attributes in the categories of quantity, quality, place, etc., or more generally

<sup>347</sup> Arist. *Met.* A 8.989b30–990a2.

<sup>348</sup> Cf. the discussion of κοσμοποιεῖν at Part II, Spec. Rec. ch. 6, sect. 6.

<sup>349</sup> Arist. *APo* 2.1.89b24–35. Useful discussion with references to the ancient commentators and the secondary literature in Detel (1993) 2:542–547. Perhaps the most familiar example of the distinction between (knowing) the ὅτι and (knowing) the διότι is that found at *Met.* A 1.981a28–30. On the ὅτι and διότι in the *On the Heavens* see Moraux (1965) cx–cii, for Aristotelian physics in general Kullmann (1974) 204–206, 242–268, for biology also Kullmann (1997). For examples of the types of questions in Lucretius see Mansfeld (1990a) 3149–3151; in Philo and Cicero *ibid.* 3120, 3125–3163, 3207–3208 (for Cicero cf. below, n. 351, *ad fin.*), and Mansfeld (1992a) 86–88; for examples in Theophrastus Mansfeld (1992a) 111, and in rhetorical treatises *ibid.* 77–80; in general Mansfeld (1990a) 3193–208. See further below, this Section *ad fin.*

the ‘functions and attributes’ to be mentioned shortly. The questions of existence and cause are also relevant for the methodology of the *Placita*. Cause is reflected in chapter headings, as at 5.14 and 5.18, both beginning with διὰ τί, ‘Through what cause’—a formula very familiar from the Peripatetic *Problemata*. We have seen above that cause is also at issue in chapters such as 1.4, 3.17, 4.11, 4.20, 5.6, 5.7, and 5.8, the heading of which begins with or contains πῶς. The heading of 2.8\*, ‘What is the cause of the inclination of the cosmos?’ (τίς ἡ αἰτία τοῦ τὸν κόσμον ἐγκλιθῆναι;), is exceptionally detailed; in the *Placita* this is the only case of this formula.<sup>350</sup> The existential question which, if called for, is preliminary to the formulation of all or some of the other questions, is a feature of quite a few *Placita* chapters, see for instance P 1.7.1, where names are listed of people who denied that the gods exist, or A at P 1.24.1 ~ S 1.20.1a, where Parmenides and Melissus (P adds Zeno) deny that there is coming to be and passing away. In the passage of the *Posterior Analytics* just cited Aristotle already illustrates the issue of existence *simpliciter* by referring to the question of the existence of the gods (then already traditional, because their existence had been denied, or doubted, by Diagoras and Protagoras and Critias, and defended by e.g. Plato in Book X of the *Nomoi*) and the centaur; what the God is, he continues, can only be established if and when we know that he does exist. A 1.7, typically, does not take sides in the dispute, but first lists arguments against the existence, or the nature and attributes, of the gods, to continue with listing answers to the question of what the God is and what his attributes are.<sup>351</sup>

We may add a few examples of such interrelated types of question from Aristotle’s *Physics* and *On Generation and Corruption*. The question of existence is on the agenda when the existence of something has been denied or doubted, or may be doubted. At *Phys.* 3.4.202b35–36 he says

<sup>350</sup> See Part II, Spec. Rec. ch. 8, sect. 1. The phrase τίς ἡ αἰτία is anyhow more rare than διὰ τί or πῶς. An interesting example is the Stoic *zēlēma* τίς ἡ αἰτία τῆς κατοπτρικῆς φαντασίας at D.L. 7.133, while A 4.15 (cf. below, Section 16) has the bland heading περὶ κατοπτρικῶν ἐμφασέων. Arist. *Mete.* 2.2.354b2 on the sea has τίς ἡ αἰτία τῆς ἄλμυρότητος καὶ πικρότητος, while the final phrase of the heading at A 3.16 is πῶς ἐστι πικρά (the preposition διὰ indicating the cause occurs A at P 3.16.1, 16.3, and 16.5). Cause is also discussed Part II, Spec. Rec. chaps. 4, sect. 1 and 7, and 6, sect. 7.

<sup>351</sup> On this chapter see Runia (1996a). For the parallel doxographies in Cic. *N.D.* Book I and Philodemus see above, n. 185. Festugière (1954) 14–16 discusses *APb* 2.1 *sub specie* of the distinction between existence and essence, with as an unfortunate consequence (or premise) that *ibid.* 9 the *quales sint* of Cic. *N.D.* 1.65 (cf. above, n. 349) are interpreted as pertaining to essence rather than the category of quality.

that the philosopher of nature must ‘consider whether the infinite exists or not, and when it exists, what it is’ (θεωρῆσαι περὶ ἀπείρου, εἰ ἔστιν ἢ μή, καὶ εἰ ἔστιν, τί ἔστιν). At *Phys.* 4.1.208a27–29 he says that the philosopher of nature must ‘study the question about place in the same way as that about the infinite, whether it exists or not, and (if so) after what fashion it exists, and what it is’ (εἰ ἔστιν ἢ μή, καὶ πῶς ἔστι, καὶ τί ἔστιν). Aristotle’s discussion of Zeno’s arguments against actual infinite divisibility and against the existence of place is too well known to need references. At *GC* 1.2.315a26–27 he says that ‘our subject is generation and corruption *simpliciter*, considered generally, whether they exist or not, and (if so) after what fashion they exist’ (πότερον ἔστιν ἢ οὐκ ἔστι καὶ πῶς ἔστιν).

In the *Topics*, as we have seen, Aristotle mentions issues to be discussed in the dialectical debate for which doxai have to be collected. One such Aristotelian issue, of major importance of course in the *On the Heavens*<sup>352</sup> and later the theme of A 2.4\*, heading ‘Whether the cosmos is indestructible’, is ‘whether the cosmos is eternal or not’, (πότερον ὁ κόσμος αἰδιος ἢ οὐ). In this case the validity or invalidity of an attribute is the issue. At *Top.* 1.11.104b8 this question is said to be relevant only to knowledge, not for choosing how to act or not to act, which recalls the contrast between theoretical issues and those concerned with conduct at A at P 1.*Praef.*2–3; we notice the presence there of the words ζητῶμεν, ζητεῖται (four times), and ζητῶν.<sup>353</sup> At *Top.* 1.14.105b24–25 the problem of the world’s eternity is also cited as example of a physical doxa. At *Top.* 1.11.104b15–17 it is cited as an instance of those cases ‘for which it is difficult to justify the cause (the διὰ τι)—for one may also pursue an inquiry (ζητήσκειν ἄν) about such problems’. The causes involved of course pertain to the world’s being eternal,<sup>354</sup> or to its not being eternal. Here the inquiry is dialectical. But the *same* terminology (ζητούμενα, ζητοῦμεν, ζητῶμεν) is used for scientific inquiry in the first chapter of the second book of the *Posterior Analytics*, cited above. Here the examples of searching for the fact (again the ascription of an attribute to a subject) are ‘whether the sun is eclipsed or not’ (πότερον ἐκλείπει ὁ ἥλιος ἢ οὐ), cf. A 2.24\*. The examples of the fact as given, or found, are ‘that it is eclipsed’ and ‘that the earth moves’ (cf. A 3.15 and 3.17). So

<sup>352</sup> See e.g. above, text to nn. 285, 333. Issue found in numerous authors, see the parallels cited Runia (1997) 95–96 and ch. 2.4\*, *fin.*

<sup>353</sup> Above, Section 6, text to nn. 126–129.

<sup>354</sup> See analysis at Part II, Spec. Rec. ch. 4, sect. 8.



in the latter case the implied problem was ‘whether the earth moves or not’. When we know the fact, Aristotle goes on, we search for its cause, the διότι.<sup>355</sup> Other questions, i.e. the existential ones, are formulated differently, e.g. ‘whether a centaur or a god exists or not’ (εἰ ἔστιν ἢ μὴ ἔστι).

It is clear that from a formal point of view such propositions in dialectical and scientific inquiry are indistinguishable, and that dialectic and science in their investigatory parts overlap to some extent. This fact is of some importance for the vexing question of the relation between dialectic and science in Aristotle, an issue for which there is no room in the present inquiry. The chapter headings of A pertain to theoretical problems in physics, and so do further topics on the agenda in the chapters of A’s treatise. Such problems can be discussed for dialectical as well as scientific purposes, and have been used in this way. An oral debate taking place between two persons can be simulated in the form of a written debate, when the author formulates a *status quaestionis* and weighs the evidence, or the arguments, pro and contra.

As to formulation a handful of A’s chapter headings beginning with εἰ, or containing this conjunction, are close to this Aristotelian phraseology.<sup>356</sup> The second half of the formula for the alternative (in Aristotle πότερον ... ἢ οὐ, or εἰ ... ἢ μὴ) is not expressed, but the alternative itself is implicitly present in the chapters themselves, which in the habitual way of the *Placita* contain contrasting views. Ch. 1.5, ‘Whether the All is one’ (εἰ ἐν τὸ πᾶν), also lists a doxa claiming the existence of an infinite plurality of kosmoi. Ch. 2.3\*, ‘Whether the cosmos is ensouled and administered by providence’ (εἰ ἔμψυχος ὁ κόσμος καὶ προνοία διοικούμενος), also lists doxai denying providence, or restricting its influence. Ch. 2.9\*, ‘On what is outside the cosmos, whether a void exists’, or ‘...whether it is a void’ (περὶ τοῦ ἔκτος τοῦ κόσμου, εἰ ἔστι κενόν), lists views in favour as well as against the void, or something outside the cosmos. Ch. 4.2, ‘Whether the soul is a body, and what is its substance’ (εἰ σῶμα ἡ ψυχὴ καὶ τίς ἡ οὐσία αὐτῆς), combines two issues; the authorial first lemma, A at P 4.2.1, as we have seen, refers to the previous chapter’s listing of views stating that the soul is incorporeal.<sup>357</sup> Also see

<sup>355</sup> Cf. e.g. Lennox (2005) 56–59 on the sequence Arist. *PA*—*GA*.

<sup>356</sup> For the formula cf. also above, n. 224 and text thereto. Examples of *theses*, or *quaestiones*, in rhetorical literature beginning with εἰ or *an* are quoted below, Section 17, *ad fin.*

<sup>357</sup> For these three chapters see above: 2.3\*, Section 1; 2.9\*, Section 2; 4.2, text to nn. 18, 110.

the other chapter headings beginning with εἰ, viz. 4.9, 4.15, 4.20, 5.4, 5.5, and 5.15.

Numerous *Placita* chapters, even those with bland headings of the περί plus genitive type, are concerned with a ‘whether ... or not’ question, that is to say not only and in some cases with questions of existence, but also with, e.g., the question whether or not to ascribe a certain attribute. The question ‘whether or not the earth moves’ can be interpreted as a diaeresis between ‘earth: moving’ and ‘earth: not moving’—but it can also be interpreted as a diaphonia, an issue that it is impossible to solve, or that has not yet been solved, for instance because it hangs together with another such a question, viz. whether there is only one earth, or more than one. This trivial example illustrates how post-Aristotelian ways of interpretation could evolve out of the standard Aristotelian phraseology for problems in dialectic and science, which were formulated not only to help one win, or at least not lose, a debate, but also to serve the advance of science.

## 15. Chapter and Lemma

*Summary.* A doxographical lemma, consisting of name-label plus tenet (in this order) and very often not including an explicit verb of declaration, combines brevity with maximum amount of information. Part of this information is provided by the microcontext of the chapter to which it belongs, inclusive of the chapter heading, or more specifically through contrast with other particular lemmata in the chapter. Most lemmata are compressed abstracts of original statements drawn from the authority indicated by the name-label, or from accounts of the views of such authorities. Adaptation to the diaeretic and thematic context of the particular chapter may produce distorted or fanciful lemmata, and the same may occur through interpretation and actualization of doctrine. Examples are given.

The majority of lemmata in Books I to IV are brief,<sup>358</sup> and as a rule have the form ‘A (or A + B etc.) said (*verbum dicendi* often only implicit) that *s* (qualified item often only implicit) is *p*’: name-label + doctrinal tenet. This statement may be followed by a brief explanation, and in rare cases as we have seen is even followed by a refutation. But most of the time a lemma is a phrase that has been pared down as much as possible. Look for instance at a typically concise Aëtian lemma, displaying the stock syntax, language, and type of contents of what Diels as we have noticed calls the ‘limpidus ... Placitorum fons’,<sup>359</sup> that is to say of what we may call the dialectical-doxographical genre, such as A at S 1.10.12 ‘Philolaus the Pythagorean the Limit and the Unlimited’ (Φιλόλαος ὁ Πυθαγόρειος τὸ πέρας καὶ τὸ ἄπειρον). The heading of this chapter, ‘On principles, what they are’ (περὶ ἀρχῶν τί εἰσιν), to quote the fuller version in P, and the introductory formulas containing forms of a *verbum dicendi* plus the word ἀρχή of several previous lemmata in the chapter show that mentally we have to supply ἀρχὰς τῶν ὄντων ἀπεφάνητο, or φησι, or καλεῖ, ‘declared/says/calls the

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<sup>358</sup> For book V the evidence of S is almost entirely lost, but even in P’s epitome the lemmata dealing with human biology and similar subjects are relatively long compared to a typically terse lemma in one of the earlier books. On brevity of lemmata see Runia (1999b) 198, 225.

<sup>359</sup> Above, text after n. 49.

principles of things (are)', thus: Φιλόλαος ὁ Πυθαγόρειος (ἀρχὰς τῶν ὄντων ἀπεφάνητο) τὸ πέρασ καὶ τὸ ἄπειρον. The verb of declaration 'is missing', to cite an expression from the Homeric scholia (e.g. *ad Il.* 6.45–46, λείπει 'ταῦτα λέγων', *ad Il.* 16.202, λείπει τὸ 'ταῦτα λέγοντες'), but is of course implied.

A lemma as a rule is an abstract of something, that is to say either of an original passage, or of a report about or earlier abstract of such a passage. It can also be an abstract of an original which as to its phraseology has been influenced by a later report. Tenets tend to be transformed, or even deformed. Such a later report, or an abstract influenced by it, may be wrong in linking a particular name-label with a particular tenet. And so on.

The name-label 'Philolaus the Pythagorean' signifies that the present tenet is attributed to a philosopher belonging to a particular school. The lemma could have been formulated even more briefly, for 'the Pythagorean' may well seem to be superfluous, as no other Philolaus is mentioned in the *Placita*, and no other person bearing this name is known as a philosopher, physician, or astronomer. Elsewhere in A this affiliation-label is indeed several times absent,<sup>360</sup> though it is found three more times. To be sure, in ch. 1.3, 'On principles, what they are', the first Aëtian chapter listing a representative series of name-labels with tenets, viz. those pertaining to the *archai*, a number of individuals are identified by means of patronymic and ethnicon, though in other lemmata of the chapter these credentials are incomplete or even lacking.<sup>361</sup> So one might suppose that the formula 'the Pythagorean' helps identify the person concerned, for neither Philolaus' patronymic nor his ethnicon are given. The absence of the ethnicon may be an accident of transmission.<sup>362</sup>

<sup>360</sup> Cf. e.g. A 2.20.12\*, T 4.21 says 'Philolaus the Pythagorean' (printed *DG* 349–350), but 5.65 has 'Philolaus'. For the presence of this phrase 'the Pythagorean' in A Book II cf. Part II, Spec. Rec. ch. 5, sect. 2.

<sup>361</sup> For A 1.3 and 1.7 cf. above, Section 7; also cf. above, n. 196, on the unsatisfactory transmission of ethnica and patronymics in the sources of 1.3. In Thphr. fr. 224–230 FHS&G ~ *Phys.Op.* fr. 1–8 Diels (in Simplicius and Alexander) the ethnicon is more often present than the patronymic. There are no patronymics in the parallel accounts in Aristotle, so the patronymics in A 1.3 may derive, ultimately, from Theophrastus. See also Mansfeld (1990a) 3157. 'Pythagorean' is the only designation hinting at school affiliation in lemmata with name-labels in 1.3.

<sup>362</sup> 'Of Croton' (Κροτωνιάτης) at D.L. 8.84 and Anonymus Londinensis 18.8; Aristoxenus' 'of Tarentum' seems to be a mistake, see Huffman (1993) 6. No patronymic cited in our sources.

But this notification of his affiliation also serves another purpose in this chapter. Another lemma, A at P 1.3.7 ~ S 1.10.12,<sup>363</sup> a prominent and quite long one preserved more fully in P than in S, deals among other things with the principles attributed to Pythagoras, who as we have seen is *disertis verbis* said by P (but not by S!) to have started a new line. These principles, viz. the numbers as well as (anachronistically) the Platonizing and so Neopythagorean One and Indefinite Dyad, are different from Philolaus' principles, though as we know Limit may be related to the One (as with the anonymous Pythagoreans in Arist. *Met.* A 5.986a23–24, see also below), and the Unlimited to the Indefinite Dyad (just as the Platonic 'Dyad and Great-and-Small' is related to the Pythagorean Infinite in *Met.* A 6.987b25–26). The quite long text of this Pythagoras lemma at P 1.3.7 ~ S 1.10.12 a bit further down refers to 'the Pythagoreans' in general, quoting their hexametric loyalty oath verbatim (*DG* 282.5–10).

What is more, another deviant view of the principles is attributed to yet another Pythagorean in this same chapter A 1.3, viz. to 'Ecphantus of Syracuse, one of the Pythagoreans', at S 1.10.16a, who by the way is identified qua person by means of the ethnicon. The formula 'one of the Pythagoreans' serves to emphasize his affiliation, while his different stance is made clear by the final sentence of the lemma, 'he was the first to declare that the Pythagorean monads are corporeal'. Here too there is still some relation with the principles attributed to the archegete, inasmuch as the monads can be said to represent the One. In S the Ecphantus lemma comes after three lemmata with the name-labels of the great Atomists, so a doctrinal affiliation with Atomism is implied in the microcontext as well as by the theory of principles he is credited with, as we have seen.<sup>364</sup>

Accordingly, one of the aspects of the presence of Philolaus in ch. 1.3 in its final lemmatic form is perhaps that he represents a view that differs from the Neopythagorean doctrine attributed to the master and (the majority of) his followers who took the oath on the tetractys,

<sup>363</sup> In Section 7 above we have seen that in S's difficult chapter 1.10 the Pythagoras lemma comes after the Philolaus lemma, which is absent in both P and T. In Diels' reconstruction of A's chapter the Pythagoras lemma at P 1.3.7 ~ S 1.10.12 comes before the Philolaus lemma at S 1.10.12, while in S it is the other way round. The inverted Succession in S improves the contrast between these two tenets.

<sup>364</sup> Above, Section 7.

and certainly not in order to represent the Sect in its totality,<sup>365</sup> as is maybe the case in chs. 2.20.12\* and A at P 3.11.3, chapters where no lemmata with the name-label Pythagoras are found. But it is also possible that the name-label Philolaus replaces an earlier name-label ‘the Pythagoreans’.

However this may be, the *Placita* document not only differences and disagreements among schools, but also disagreements and differences among members of a school. A remarkable example is Cleanthes’ view of the conical shape of the stars at 2.14.2\* (in P, S, and T), while the view of ‘the Stoics’ that they are spherical is mentioned in the first lemma of this chapter (in P; S 1.24.2d has ‘the others’—Wachsmuth, following Heeren, adds ‘the Stoics’). The penultimate Dielsian lemma of the chapter ‘On shapes’, A at S 1.15.6a, is even clearer: ‘Cleanthes is the only one among the Stoics who declared fire to be conical’ (Κλεάνθης μόνος τῶν Στωικῶν τὸ πῦρ ἀπεφήνατο κωνοειδές). We may recall the numerous differences among the members of the Stoic school listed in the *laudationes*, or nests of citations with name-labels and (often) references to works, in Diogenes Laërtius Book VII. And as a spectacular example of disagreement, or rather disloyalty, we should of course also mention Timagoras, who according to A at S 1.52.2 (4.13.6 Diels) ‘debased the Epicurean Sect’.

The Philolaus lemma in A 1.3 at S 1.10.12 thus combines maximal brevity with maximal information, provided we are aware of its systematic Aëtian context and its position in the Italian Succession. The arrangement and presentation of such abridged doctrines in the micro-context of the chapter contribute to their meaning and comprehension.

Fortunately (and rather exceptionally) in the present case we do know what the lemma is a (rather transformed) abstract of, for we still have the *ipsissima verba* of Philolaus, fr. B1 DK: ‘nature in the cosmos is ordered from things unlimited as well as limiting, also the whole cosmos and all things in it’ (ἅ φύσις δ’ ἐν τῷ κόσμῳ ἀρμόχθη ἐξ ἀπείρων τε καὶ περαινόντων, καὶ ὅλος ὁ κόσμος καὶ τὰ ἐν αὐτῷ πάντα). We note that Philolaus’ plural forms in the genitive, the second of which is a participle, have been replaced by the innocuous (Aristotelian) substantive πέρας and substantivized adjective ἄπειρον. We may notice on the one hand how much precision and subtlety is lost because of this substitution, while on the other we are confronted with an

<sup>365</sup> Cf. A 2.30.1\* (S’s version 1.26.4; P omits the name-label Philolaus) τῶν Πυθαγορείων τινὲς μὲν, ὧν ἔστι Φιλόλαος.

instance of pseudo-precision that would perhaps have gone unnoticed if Aristotle's account had been lost. Aristotle attributes the principles 'limited and unlimited' to the first group of Pythagoreans, arguably including Philolaus, that is discussed in the first book of *Metaphysics* (A 5.986a18–19, πεπερασμένον and ἄπειρον), while those of the next group of Pythagoreans are 'limit and unlimited' (A 5.986a22–23, ἕτεροι δὲ τῶν αὐτῶν τούτων ... πέρασ καὶ ἄπειρον). Presumably the name-label Philolaus replaced this name-label; we note that the precise wording of the tenet is not that of Aristotle's first group of Pythagoreans but of his second. In the long period of time between Aristotle and A someone has reduced the wording of the Philolaus tenet to that of an ingredient of Aristotle's account of the Pythagoreans, *modo doxographico* preferring the brief πέρασ to the longer πεπερασμένον. In terms of textual criticism a change from ἀπείρων τε καὶ περαινόντων to πέρασ—ἄπειρον would be a so-called banalization, but what we have here is neither a banalization nor a lapsus, but what looks like the deliberate adoption of Aristotle's practical and dearchaizing terminology.<sup>366</sup>

There are other cases of Pythagorean doctrines, anonymous in Aristotle, which have been provided with name-labels in A. There is only a single reference in Aristotle's works to Philolaus, and he never mentions either Euphrantus or Hicetas.<sup>367</sup> A and his colleagues as a rule tend to eschew anonymity, although the tenets are more important than the name-labels. Name-labels help to distinguish between tenets, and may serve as a sort of mnemotechnic pegs to hang tenets on, although, as for instance with the label Philolaus the Pythagorean, this need not be their only function. At any rate the presence of a name-label is no guarantee that the abstract at issue derives more or less unscathed from an original work.

We may also observe that the *Placita* contains a fair number of doxai that cannot be abridged renderings, or abstracts, of doctrines attributable in an acceptable way to the authority whose name-label is included in the lemma. Take for instance the lemma on Thales in the chapter entitled 'Who is the God?', very brief at P 1.7.2, as we saw,

<sup>366</sup> Plato's formulas for this pair of opposites, esp. in *Philebus*, are mostly wordier (but see e.g. *Phlb.* 23c10), and there is no explicit reference to Pythagoreans. For Philolaus' treatise as the source behind Aristotle's attribution of doctrine to the first group of anonymous Pythagoreans see Burkert (1972) 235–259, Huffman (1993) 233–261.

<sup>367</sup> Philolaus' name is mentioned once, in an ethical context: *EE* 2.8.1225a33 ~ Philololaus fr. B16 DK, see Burkert (1972) 235. A single reference to Eurytus is at *Met.* N 5.1092b10–13, see Burkert *ibid.* 41, 237.

longer at S 1.1.29b. This is a fabrication. The phrase shared by both sources (and paralleled in two other source authors quoted in Diels' apparatus of parallel texts in the *DG*, among whom Athenagoras *Legatio* 23.4, who in our view does not depend on A)<sup>368</sup> is 'Thales (proclaimed that) the God is the Intellect of the cosmos' (Θαλῆς νοῦν τοῦ κόσμου τὸν θεόν).<sup>369</sup> We can be very sure Thales never said this. In this chapter of A this view that God is the Intellect is also ascribed to Democritus at P 1.7.4 ~ S 1.1.29b–<sup>370</sup> another quite unlikely attribution. It is attributed a shade more credibly in A at S 1.1.29b to Archelaus and to Anaxagoras, to both Socrates and Plato in P at 1.7.6 ~ S 1.1.29b and P 1.3.11 ~ S 1.10.16 (S both times omits Socrates), and in S 1.1.29b for A 1.7.23 Diels again to Zeno (the Stoic), though a certain amount of distortion is of course undeniable. A further explanation of this unhistorical attribution to Thales is the fact that a link between the Divinity and Intellect is also attributed not only to other early Ionians but also to several other physicists in this chapter. Thales in a manner of speaking is depicted as the person who first formulated and thus introduced this all-important idea. A picture which is rather different from that in A at P 1.2.2 and P 1.3.1 ~ S 1.10.12, where Thales is said to have made water the element and principle, and criticized for having failed to distinguish between principle and element. Actually, the attribution of the notion of a divine Intellect as God of the cosmos in all probability spread from an Anaxagoras lemma to lemmata with name-labels of other Ionians, and then to the rest.

In the present case, Aristotelian precedent is involved as well, for this pseudo-Thalesian Intellect is the doxographical successor to a cosmic soul mentioned by Aristotle, who tells us that 'some people believe the soul is intermingled with the whole,'<sup>371</sup> which may be the reason

<sup>368</sup> See Vol. 1:312–314.

<sup>369</sup> Confirmed Cic. *MD* 1.25 ~ Thales fr. A22a DK, *Thales* [...] *deum* [...] *eam mentem quae ex aqua cuncta fingeret*. In Cicero's Epicurean doxography on the gods (in the remains of Philodemus *De Pietate* the Thales section is no longer extant) that is earlier than A but no doubt depends on the same tradition. See further above, n. 185.

<sup>370</sup> Text in P corrupt, and including part of the next lemma attributing divinity to the Soul of the cosmos according to Diogenes and Cleanthes and Oenopides, which has been preserved correctly in S. The lemma in Cyril, who had independent access to P (see Vol. 1:166–168), quoted *ad loc.* as a witness to P in Diels' apparatus, reflects this blend of lemmata, but his text of P (as that of E) had the correct reading ἐν παντί σφαίροειδῆ. Mau and Lachenaud print the corrupt ἐμπυροειδῆ.

<sup>371</sup> Above, n. 292. Cf. Diels *DG* 128.



why Thales thought all things are full of gods'.<sup>372</sup> The part of the lemma preserved at S 1.1.29b and lacking at P 1.7.2 in part reinterprets this information in Stoicizing terms (note διήκειν): '(he said) the All is both ensouled and full of *daimones*; and the elemental wet substance is pervaded by a divine power that sets it in motion'. The formula 'full of *daimones*' is a quasi-literal quotation of Aristotle's formula 'full of gods'. We call this quasi-literal because 'gods' (θεῶν) have been replaced by 'demons' (δαμόνων), divinities of lower rank, and Aristotle's Thales did not know of a divine mind beyond the gods. Furthermore, Aristotle at *An.* 1.2.405a19–21 also ranges Thales among those who assumed the soul to be a moving entity (κινητικόν τι).<sup>373</sup> In A Book IV, on the soul, Thales is credited in a similar way (ultimately on the basis of this other Aristotelian passage) with an anticipation of what are in fact defining characteristics of Plato's world-soul and Aristotle's self-moved mover, P 4.2.1 ~ S 1.49.1a: 'Thales was the first to declare the soul (to be) an always-moving or self-moving substance'.<sup>374</sup> A whole chain of testimonies is involved.

This is also clear from Athenagoras, *Legatio* 23.4, cited a moment ago. Here we read that Thales 'was the first to distinguish God, demons, and heroes'. Athenagoras combines Thales' tenet about the God as cosmic Intellect at P 1.7.2 ~ S 1.1.29b with the definitions at P 1.8.2 of demons and heroes, and of good as distinguished from evil demons and heroes. We may posit that the presence of demons in the Thales tenet in A at S 1.1.29b triggered the amplification found in Athenagoras of this theme with the definitions in P 1.8.2.

One should ponder the Thales lemma at P 1.7.2 ~ S 1.1.29b in the microcontext of its Aëtian chapter, where as we saw the cosmopoetic activity of the God is an item in several other lemmata as well (e.g. already in the critical account of Anaxagoras and Plato in diaphonic deadlock at P 7.1), while Stoicizing 'divine forces pervading the elements, or bodies' are also mentioned in the Anaximenes lemma, A 1.7 at S 1.1.29b. In this chapter brief reworded pieces of information of various provenance have been interwoven in such a way as to contribute

<sup>372</sup> Arist. *An.* 1.5.411a7–8, cf. Diels *DG* 128 with n. 2, and above, text to n. 182.

<sup>373</sup> *An.* 1.2.405a19–21, cf. next n. For these Aristotelian passages cf. Algra (1999) 52–53. For the *daimones* cf. above, n. 98.

<sup>374</sup> Θαλῆς ἀπεφάνετο πρῶτος τὴν ψυχὴν φύσιν ἀεικίνητον ἢ αὐτοκίνητον. The adjective ἀεικίνητος is Platonic, αὐτοκίνητος Aristotelian (at *Phdr.* 245c5 αὐτοκίνητον is read by the first hand and corrected into ἀεικίνητον by the second hand in *Pap.Oxyrr.* 1017, see now the discussion at *CPF* I 1\*\*\*, 265–266. ἀεικίνητον however is far better attested).

to a significant presentation of interrelated tenets with a cosmological significance.<sup>375</sup>

So a new and spurious doxa may to some extent be spun out of other doxai, and may be formulated according to the same pattern, a pattern which, by the way, proves to have acquired canonical status. Tenets can be produced which, so to speak, are pseudo-abridgements of an original, but they may also be abstracts and transformations of something intermediate, either hypothetical or founded in fact, between the original and themselves.

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<sup>375</sup> See also above, Section 2 *init.*, on Empedocles' suns at A 2.20.13\* in their micro-context.

## 16. Kephalaia and Doxai: *Authorial Comments on Method, Use, and Sources; Galen and the Placita*

*Summary.* In one place the *Placita* use the term *kephalaion* ('main point', 'summary', also 'caput' or 'heading') to denote 'lemma'. The last lemma of ch. 4.14 informs us about one of the purposes of collections of *placita*: 'one may use all these *kephalaia* with regard to 'how we see''. Note 'all': the lemmata are to be used together. 'How we see' is the heading of the preceding ch. 4.13, to which ch. 4.14 on mirror images is complementary. It is a fine example of a title of a problem in physics also found elsewhere, for example as one of the philosophical as well as scientific issues mentioned in the account of the Stoic *physikos logos* at Diogenes Laërtius 7.133. It is several times discussed by Galen, whose discussion of alternative and contrasting views concerning vision and mirror images is remarkably parallel to that of the two *Placita* chapters, both as to contents and as to methodology. He will have used a doxographical source, or at least recalled one. Ch. 4.13 is also remarkable because it contains authorial references to other versions of two its lemmata, one pertaining to contents, the other to name-labels. A similar reference is also found in an earlier chapter. Here we can look over Aëtius' shoulder at one or more of his doxographical predecessors. The section ends with a discussion of the use of the terms *doxa* and *gnome* in the treatise.

The *Placita* in A at P 4.14.4 ~ S 1.52.16 use what presumably became one of the terms of reference for a lemma, or brief statement of a doctrinal point of view or of a topic, viz. κεφάλαιον: 'main point', 'gist', 'summary', 'short account':<sup>376</sup> a *hapax* in the body of our compendium. In other contexts the word is familiar enough as meaning 'chapter heading' or 'chapter title', 'passage', 'chapter' (*caput*);<sup>377</sup> the heading or

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<sup>376</sup> 'One may use all these *kephalaia* with regard to the "how we see"' (for the Greek see below). This sense of *kephalaion* first in Pindar, *Pyth.* 4.116–117, 'but you know the main points of these tales' (ἀλλὰ τούτων μὲν κεφάλαια λόγων / ἴστε). A good example at Plato *Ti.* 17c. Diels *DG* 64 uses the word 'capitula'. One is tempted to quote D.L. 2.2 on Anaximander, 'he has expounded his *placita* in a summary way' (τῶν δὲ ἀρεσκόντων [...] πεποιήται κεφαλαιώδη τὴν ἔκθεσιν), and to apply it to A ...

<sup>377</sup> Among the meanings of *caput* the dictionary lists 'heading', 'summary', 'single clause', 'section', 'paragraph'; for κεφάλαιον see also Lampe, *v.* On its use by Cicero and some others see Schröder (1999) 104–105.

headline of a chapter should of course provide the gist of its contents. The mss. of P actually list the *κεφάλαια*, chapter headings, at the beginning of each book. Diels rejected these *pinakes* as later additions, Mau and Lachenaud as we shall see are right in retaining them.

A chapter, or group of chapters, can be of course also be called a *logos*, see A at P 1.8.1 on chs. 1.6–7 and on 1.8 itself, just as of course a whole book can be (proem to book II referring to Book I as well as to Book II; proem to Book III referring to Book II, see above, Section 5).

In Book IV there are two chapters on sight, for the most part preserved in both P and S, viz. 4.13, ‘On sight, how we see’ (περὶ ὁράσεως, πῶς ὁρῶμεν—shorter version of the heading in S), and 4.14, ‘On appearances in mirrors’ (περὶ κατοπτρικῶν ἐμφάσεων).<sup>378</sup> We have seen that according to the Stoic *physikos logos* at D.L. 7.133 the question ‘How we see’ is followed by the related issue ‘what is the cause of the appearance in the mirror’, and also seen that Lucretius’ extensive account of sight, 4.26–468, includes one of mirrors and mirror images, 4.269–323.<sup>379</sup> We note in passing that there is no reference to mirror images in Aristotle’s *On the Soul*, that is to say in the account of sight where one would expect to find it, though what happens in mirrors plays a crucial part in the explanation of the phenomena of reflection in his *Meteorology*.<sup>380</sup> But the close connection between theories of sight and

<sup>378</sup> The mirror issue is cited Sen. *Ep.* 88.27 (in Posidonius fr. 90 E.-K, cf. above, nn. 200, 230, below, n. 387): ‘The wise man [i.e. the philosopher] will know what causes the reflection in a mirror, but the mathematician can merely tell you how far the body should be from the reflection, and what shape of mirror will produce a given reflection’ (tr. Gummere). Cf. also Vol. 1: 228–231.

<sup>379</sup> For the Stoics see above, text to n. 225, for Lucretius text to n. 306. On Lucr. 4.269–323 see Koenen (1995) 19–46. Calcidius in his substantial and for the most part doxographical section on sight (in *Timaeum* chs. 236–248) discusses in succession as well as together various views on sight and reflection in mirrors, which as to its main contents and as to certain details is parallel to the account in the two chapters of A, but much different as to numerous other details. For the doxographical approach see Calc. ch. 236, p. 248.17–19 Waszink, a good example of a definition of the utility of doxography: ‘But because on this subject [sc. sensation] several others have after him [sc. Plato] worked out various views in published works, I shall refer to those which are reputable, to ensure that the treatment of the subject at hand will be thought more complete’ (*sed quoniam de hoc plerique alii post ipsum opiniones varias libris conditis sunt executi, eas quae sunt in honore perstringam, quo perfectior propositae res tractatus habeatur*). Treatment of the Calcidius passage must be postponed to another occasion.

<sup>380</sup> The connection between the words mirror (ἐνοπτρον) and image (ἐμφασις) is first attested at Arist. *Mete.* 1.8.345b13–15, then in the account of the rainbow 3.4.373b22–24, and in that of mock suns 3.6.377b17–18. In the first of these passages the view of ‘some people’ (the third to be mentioned by Aristotle) that the Milky Way is a reflection of our vision to the sun (345b9–12) is refuted. A garbled echo of this view is the third one

reflections in mirrors which we find with the Stoics, in Lucretius, and in the *Placita*, is prefigured in Plato's *Timaeus*, where the explanation of the mechanism of vision at 45b–46a is immediately followed by one of mirror images at 46a–c. A fragmentary text preserved in an Oxyrhynchus Papyrus refers the reader to the discussion of what is seen in a mirror in a Comment(ary) on the *Timaeus* (περὶ μὲν οὖν τούτων ἐν τοῖς εἰς τὸν Τίμαιον εἴρηται), and adds that one should not think of an image (εἰδωλον) according to the view of Democritus or Epicurus, or of effluences (ἀπορροάς) in the manner of Empedocles.<sup>381</sup> This constitutes a remarkable coincidence with the first two lemmata of A 4.14, name-labels Empedocles and Democritus Epicurus, and an interesting example of a connection between the *Placita* tradition and that of commenting on the *Timaeus*.<sup>382</sup>

Ch. A 4.13 is a privileged example of a *Placita* chapter, since it is probably complete. The final 'lemma' of the next chapter, 4.14, is not a matter of doctrine but an *authorial comment*, pertaining to both chapters: 'one may use all these *kephalaia* with regard to the 'how we see'' (δύναται τις πᾶσι τούτοις τοῖς κεφαλαίοις χρῆσθαι ἐπὶ τοῦ πῶς ὁρῶμεν).<sup>383</sup> Note that the concluding formula 'how we see' (πῶς ὁρῶμεν) nicely repeats the second part of the heading of ch. 4.13 in P. 'How we see' is a *thesis*, or *zêtêma*,<sup>384</sup> a matter of inquiry in relation to which various proposals have been made, as duly listed in these chapters, and all of which one may or even should consider when looking for an answer to this question.

Accordingly, this authorial note tells us explicitly what purpose a collection of *placita* may serve. Selection and condensation have produced a rich density of useful matter. It is stated explicitly that *kephalaia* should be considered *en bloc* (note πᾶσι) and in relation to each other: the collection *as arranged* has its uses and advantages. For the term *κεφάλαιον* as used of a variety of abridged presentation it is of some interest to

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cited in A at P 3.1.2 ~ S 1.27.2 (cf. above, n. 78), according to which the Milky Way is a 'presentation as in a mirror' (κατοπτρικὴν φαντασίαν) of the sun which reflects its rays to the heaven.

<sup>381</sup> *Oxyr. Pap.* 1609, printed as Empedocles fr. B 109a DK; cf. Lachenaud (1993) 155 n. 3 (p. 291).

<sup>382</sup> Cf. Mansfeld (2000b) 192–200 = (2002d) 451–458 on A 2.31\* in relation to the commentary tradition dealing with the *Timaeus*, and above, n. 379.

<sup>383</sup> Wachsmuth irresponsibly bracketed this phrase, see *ad* Stob. 1.52.16 p. 486.1–2: 'leguntur etiam ap. Plut. l.s., videntur tamen antiquitus ex glossemate exorta'. Not followed by Mau and Lachenaud for P.

<sup>384</sup> Cf. above, Section 14.

note that ἐπιτομή and κεφάλαιον are put on a par in Galen's account of Chrysippus' manner of presenting evidence, *PHP* 3.5.21 (~ *SVF* 2.885): his quotations of the poets<sup>385</sup> are interlarded with 'a few remarks' (ὀλίγους λόγους) of Chrysippus himself, 'often as an explanation of the meaning of the passage quoted, but often also as a kind of abridgement, or summary' (πολλάκις μὲν ὥσπερ ἐξηγήσιν ὧν ἡ ῥῆσις βούλεται, πολλάκις δ' ὥσπερ ἐπιτομήν τινα καὶ οἷον καθόλου τι κεφάλαιον). A good example of quite brief *kephalaia* is found in A's quasi-contemporary Philo of Alexandria, *Quod Deus* 68, viz. '(God is) as a man' and 'God is not as a man' (τοῖς προειρημένοις δυοῖ κεφαλαίοις, τῷ τε 'ὡς ἄνθρωπος' καὶ τῷ 'οὐχ ὡς ἄνθρωπος ὁ θεὸς' κτλ.). These economically phrased formulas are opposed to each other in the same disjunctive way as tenets may stand in patterned diaphonic relations of contrast to each other in a chapter of the *Placita*. And some centuries earlier Philo Mechanicus already used the term κεφάλαια for themes to be treated (e.g. *Belopoiia* 59.4 Thevenot), and still earlier Plato, as we saw in Section 14 above, did so to designate key passages in the poets.<sup>386</sup>

The term κεφάλαιον (as in the final lemma of 4.14) pertains to the way a lemma, a statement providing the gist of something, is formulated, as well as to its importance. This is why the word also means 'heading', 'title', for as a rule a title briefly summarizes, or at least hints at, the theme or contents of what it is a title of. By a happy coincidence a heading is found at the head of what it is a heading of; it is, literally, a headline. Hence also the meaning 'chapter', that is to say something inclusive of its title, or a topic of which the theme can be indicated by means of a brief formula. In our *Placita* context an especially interesting use of the term κεφάλαιον is found in Geminus' *Epitome* of Posidonius' *Meteorology*, where we read that 'the astronomer and the physicist will often try to prove the same *main point* (κεφάλαιον), e.g. that the sun is large, that the earth is like a sphere [...]'.<sup>387</sup> 'That

<sup>385</sup> Cf. Tieleman (1996) 219–235.

<sup>386</sup> In the surviving Greek fragment of *QG* 1.55 Philo calls these the 'highest main points' (ἀνωτάτω κεφάλαια); Marcus (Loeb) translates 'highest principles'. For Philo Mechanicus see Schröder (1999) 108, for Plato *Lg.* 7.811a and Hippias' anthology see above, n. 335 and text thereto. Cic. *Att.* 16.11.4 (Posidonius fr. 41a, T 44 E.-K.) tells Atticus that he has asked Athenodorus Calvus to send him 'the main points' (τὰ κεφάλαια) of Posidonius' *On Duty*. Kidd's translation (1999) 42 'the headings', presumably inspired by Shackleton Bailey *ad loc.*, is less good than his formula (1988) 1:188 'some sort of résumé or epitome'; cf. Francese (1999) 65–66.

<sup>387</sup> Geminus *ap.* Alex.Aphr. at *Simp. in Ph.* 291.21–92.31 ~ Posidonius fr. 18 E.-K. (cf.

the sun is large' represents the positions cited in the first two lemmata of A 2.21\*, the chapter 'On the size of the sun'.<sup>388</sup> 'That the earth is like a sphere' represents the position of the first lemma of ch. 3.10. The parallels between Posidonius' κεφάλαια and themes in the *Placita* are clear, but we have seen how Plato and Philo Mechanicus already use the term.

The term δόξα, 'opinion', 'view', 'tenet', which inspired Diels to coin the word doxography, and which is presumably more familiar to scholars in this context, pertains to the lemma's *contents*. Lemmata are equal as to form, and to some extent similar as to type of content, but unequal when it comes to actual and detailed contents. A doxa is not a certainty, but always the opinion, or judgement, of somebody, or some people. When you use, or think of, a doxa you imply that other doxai are possible, or given, which may differ from or even be opposed to it.

In Diogenes Laërtius' overview of Stoic physics the questions 'How we see' and 'What is the cause of mirror images' (πῶς ὁρῶμεν, and τίς ἡ αἰτία τῆς κατοπτρικῆς φαντασίας), are listed among the issues studied by both philosophers and scientists (D.L. 7.133).<sup>389</sup> the themes of A 4.13 plus 4.14, in the same order. Others, perhaps unsurprisingly, also mention the treatment of the issue 'How we see'. The Pyrrhonists reassuringly tell us that 'they do not destroy seeing, but only do not know "how we see"' (οὐ γὰρ τὸ ὁρᾶν ἀναιρεῖν, ἀλλὰ τὸ πῶς ὁρᾶν ἀγνοεῖν, D.L. 9.104); none of the available options is acceptable to them. Galen, who refuses to accept the claim that they do not destroy sight itself, lets it be known that he is aware of it, and adapts it to his own purpose. He moreover adds and cites the second half of the heading of ch. 4.13 verbatim: in the first chapter of the *De Consuetudinibus* he says that 'contradicting all the tenets concerned with the (issue) how we see' (ἀπάσαις ἀντειπὼν ταῖς περὶ τοῦ πῶς ὁρῶμεν δόξαις) would be equivalent to the refusal to admit that we see at all.<sup>390</sup> If proof were needed that Galen was familiar

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above, nn. 200, 230 and text thereto, n. 378); see also Sen. *Ep.* 88.21–28 (~ Posidonius fr. 90 E.-K.), with Kidd (1988) *ad locc.*

<sup>388</sup> Sen. *Ep.* 88.27 (~ Posidonius fr. 90 E.-K.) is more meticulous: the philosopher proves that the sun is large, the astronomer calculates how large.

<sup>389</sup> Cf. above, text to n. 227.

<sup>390</sup> *Scr.Min.* II p. 9.9–13 = *CMG Suppl.* III 2.7–10 Schmutte, εἴθ' ὃ τι ἂν εἴπωμεν, ἀνατρέποντες λόγῳ νομίζουσιν ἅμα τούτῳ καὶ τὴν τοῦ πράγματος ὑπαρξίν ἀνηρηκέναι, καθάπερ εἴ τις ἀπάσαις ἀντειπὼν ταῖς περὶ τοῦ πῶς ὁρῶμεν δόξαις οὐδ' ὁρᾶν ἡμᾶς συγχωροίη. Schmutte in his apparatus points at the parallel argument in the Greek fragment of *On Medical Experience* at Deichgräber (1930) p. 101.32–32.2, and at that in the final chapter of *Caus.Proc.*, which we discuss in the text and cite in the next n.

with doxographical literature, this would surely be it.<sup>391</sup> The critique of the Pyrrhonists is repeated at *De Tremore* 7.629.11–13 K.: ‘to destroy the phenomena amounts to agree that we do not see, because we do not know how we see’ (ὁμοίον ἐστι τῷ μηδ’ ὁρᾶν ἡμᾶς ὁμολογεῖν, ὅτι μὴ γινώσκουμεν ὥπως ὁρῶμεν).

In the final chapter of the *De Causis Procatartictis* this skeptical way of arguing, entailing according to Galen the conclusion that we do not see at all, is cited as well, and illustrated with examples concerned with causal explanations of sight:<sup>392</sup>

Consider, among the things that are plainly apparent, whether we see (a) as a result of something coming from what we see to our eyes, or (b) as a result of something being carried from us to each of the things we see, or rather because (c) something that comes from us makes contact with something carried from them, or (d) whether our perception of these things occurs neither because something is carried from them to us, nor from us to them, but because of some intermediary, like a walking-stick.

In his commentary Jim Hankinson points out that (a) is Epicurean, (b) Chrysippean, and (c) Platonic, and that the analogy of the stick is associated with Aristotle and the Stoics.<sup>393</sup> It may therefore seem that Galen formulated this string of examples independently; he knew a lot of philosophy and was well read. But in chapter A 4.13, ‘On vision, how we see’, the second half of whose heading and whose doxai in general are cited in the *De Consuetudinibus*, all the alternatives mentioned in the *De Causis Procatartictis* are represented, as well as a few others Galen does not mention.

We cannot here discuss this in appropriate detail, so a few instances will have to suffice. A at P 4.13.1 ~ S 1.52.1, name-labels Leucippus Democritus Epicurus, on the ‘penetration of images’ (εἰδῶλων εἰσχω-

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For the formula (τὸ) πῶς ὁρῶμεν designating this issue cf. Alex.Aphr. *de An.* 43.16–19, in *Mete.* 141.11–12, in *Sens.* 25.25–26, Porph. *V. Plot.* 5.24 (title, given by Porphyry, Περὶ ψυχῆς τρίτον ἢ περὶ τοῦ πῶς ὁρῶμεν), Anon. in *EN* 123.7–10, Aristotle demonstrates that virtues are not by nature, ‘for if they were, it would be the job not of the ethicist but of the physicist to speak of them, just as about the (issue) how we see’, οὐκέτ’ ἂν ἦν τοῦ ἠθικοῦ ἀλλὰ τοῦ φυσικοῦ περὶ αὐτῶν εἰπεῖν, ὥσπερ καὶ περὶ τοῦ πῶς ὁρῶμεν.

<sup>391</sup> Cf. above, n. 5; also see Mansfeld (1990a) 3141–3143 on *De Locis Affectis* 8.157.5–159.9 K.

<sup>392</sup> Tr. Hankinson (1998), slightly modified; text 148.5–24 Hankinson: *Put a mox in hiis quae manifeste apparent, aut [a] veniente aliquo ab hiis quae videntur ad oculos nostros aut [b] aliquo a nobis ad singulum illorum aut [c] omnino quod a nobis exsistit id quod ab eis fertur contangente videmus, aut [d] neque ex illis ad nos neque a nobis ad illa lato aliquo sed per intermedium sicut per baculum sensatio nostra de eis fit.*

<sup>393</sup> Hankinson (1998) 280.



σις), represents Galen's (a). The next two lemmata, A at P 4.13.1, plus S 1.52.10 with name-label 'some of the Academics' (note that for S 1.52.10 no parallel is extant in P),<sup>394</sup> which are about the 'secretion of certain rays' (τινῶν ἀκτίνων ἔκκρισις) that bounce back from the object to the eyes, represent Galen's (b). We notice the nicely balanced contrast between εἰσκρισις and ἔκκρισις, though the latter is a conjecture of Diels. The opposition between images and rays still creates a diaphonic pattern, even if one rejects this emendation. The alternative (b) is also represented by A at P 4.13.3 ~ S 1.52.5, Hipparchus, and then, S 1.52.6 only, by Pythagoras and Parmenides. At A at P 4.13.2 ~ S 1.52.12–13, Empedocles and Hestiaeus (the latter not in P) represent Galen's (c), viz. by positing a combination of images and rays. These two name-labels are found in S only. P, in the process creating a *Schwindelfragment*, that is to say a false verbatim Empedocles fragment consisting of the single word ἀκτινείδωλον, replaced the name-label Histiaeus preserved at S 1.52.13 with that of Empedocles from the previous Aëtian lemma, because the tenets of Empedocles and Histiaeus are practically indistinguishable. For the purposes of the epitomator a coalesced tenet proves sufficient, and he omits the contents of the original Empedocles lemma.<sup>395</sup> Images are replaced by 'effluences' (ἀπορροαί) by the dissident Epicurean Timagoras at S 1.52.2, and effluences are attributed to Empedocles as well at the end of the lemma A at S 1.52.12, see below. The intermediary instrument (d) is represented by S 1.52.3, Strato introducing air, and S 1.52.8, Alcmeon introducing the transparent.

A reconstruction of the chapter according to the interplay of diaereses, with room for compromises and exceptions, would perhaps not be too difficult. And we are convinced that the diaeretic template of the *Placita* has influenced the diaeresis of four possible views concerning the process of sight presented by Galen. He first posits a diaeresis of tenets that exclude each other: a diaphonia between (a) the view that images enter the eye and (b) the rays that leave it. Next is a compro-

<sup>394</sup> Diels *DG* 55 points out that the second item at 1.52.1 in S is a doublet plus the name-label 'the Academics' of name-label-less P 13.2, but (1881) 349–350 he argues that a coalesced lemma of P was interpolated in the text of Johannes Damascenus (a case of contamination), so Wachsmuth brackets the second item in his text of S.

<sup>395</sup> Noticed by Diels, *DG* 64, whose observation is rejected by Lachenaud (1993) 291 n. 3 because he fails to take into account (which he seems to do on principle) that P is a witness for a lost work, which is also (and often better) attested by S where S is extant. Also cf. Vol. 1: 229.

mise view, for (c), the combination of entering matter and issuing rays, is a combination of (a) with (b). Finally, (d), the appeal to an extraneous instrument, amounts to an exceptional view, because it fails to fit the others and so is beyond the original diaeresis of (a) versus (b). Such a structure is typical of numerous *Placita* chapters; examples have been cited sufficiently above, and are of course abundantly provided in the *Specimen Reconstructionis* of A Book II.

A simplified version of this diaeresis is found in Galen's substantial chapter on sight at *PHP* 7.5, where, to cite one of his summarizing formulas (p. 460.10–11 De Lacy), he defends and explains his view that 'sight reaches out through the intervening air to the coloured object'. The announcement, p. 452.29–30, '*how* it is arguable that *we see*' (ὅπως εὐλογόν ἐστιν ὁρᾶν ἡμᾶς) echoes the second part of the heading of A 4.13. At *PHP* 7.5.1–2 the diaphonic division starts from the object that is seen, which 'either sends something from itself to us', or 'waits for some sensory power to come to it from us'. The first alternative, rejected by Galen, is illustrated by the form such emissions might take: 'some part or force or image or quality of the external bodies' would come to the perforation of the pupil (τινὰ μοῖραν ἢ δύναμιν ἢ εἶδωλον ἢ ποιότητα τῶν ἐκτὸς ὑποκειμένων σωμάτων). Of these four, the 'part' is paralleled by the 'effluences' in A at S 1.52.12, Empedocles (second part of the lemma) and at S 1.52.2, Timagoras, the 'force' by Aristarchus' tenet at S 1.52.4 that 'in some way shapes give their form to the air', the 'quality' and 'power' by Strato's tenet at S 1.52.3 that 'colours are carried from the bodies and give their colour to the air in between', and the 'image' at P 4.13.1 ~ S 1.52.1, the Atomists, and at S 1.52.12 Empedocles (first part of the lemma). Galen clearly has a collection of views such as that found at A 4.13 in mind. He also discusses various views concerned with sight (Aristotle, Plato, the Stoics, Epicurus) at *PHP* 7.7, with special attention for Aristotle's view of vision through 'reflection (κατ' ἀνάκλασιν) which comes to us from sense-objects', p. 472.3–4 De L., or 'things seen through *mirrors*' referred to the 'reflection of the visual ray' (p. 472.7–8 De L. τά τε διὰ τῶν κατόπτρων ὁρώμενα ... εἰς ἀνάκλασιν ὄψεως ἀναφέρει ...). Though it is significant that Galen, too, discusses mirror images after the chapter on vision (cf. A 4.14 after 4.13 and the parallels in the *Timaeus*, Calcidius' Commentary on the *Timaeus*, Lucretius, and the Stoic *physikos logos*),<sup>396</sup>

<sup>396</sup> See above, n. 379, text after n. 380.

what is even more interesting is that in this passage he connects this Aristotelian account of sight by reflection (for which De Lacy *ad loc.* refers to *An.* 3.12.435a5–10) with his discussion in the *Meteorology* of the rainbow, of the halo around the sun and moon, and of the counter-suns and mock suns, sc. as phenomena of reflection: ‘he reduces everything to the reflection of the visual ray’ (εἰς ἀνάκλασιν ὄψεως ἀναφέρει πάντα, *PHP* p. 472.5–8). In the (lacking a name-label but Aristotelian) account of the rainbow in A at P 3.5.3 ~ S 1.30.1 (3.30.6 Diels) the ‘third mode of seeing comprises things reflected as those in mirrors; now the rainbow is a phenomenon of this sort’. At A 3.18 (name-label-less but as to contents Aristotelian as well) the halo, too, is explained as a phenomenon of reflection. For all Galen’s learning and familiarity with Aristotle’s works we may also think of a combination in his mind of various passages remembered not only from different original works by Aristotle but also from doxographical lemmata such as these, which purvey the information in an easy sort of way. The distinction between meteorological phenomena which have a substantial nature and those based on reflection which plays an important role in both Aristotle and A Book III has been discussed above, Section 4.

Seneca must have known a chapter, or passage, in a doxographical work belonging with the same tradition as A 4.14. At *Nat.* 1.4.5, he tells us:

There are two opinions about mirrors. (a) Some think that replicas are seen in mirrors; that is that the shapes of our bodies has emanated and separated from our bodies (*a nostris corporibus*). (b) Others believe that there are no images inside the mirror but that the bodies themselves are seen because eyesight is bent back and reflected on it again.

Exactly the same diaphonia is found at A 4.14, a chapter for which the transmission in P and S is virtually the same.<sup>397</sup> (a) The first two lemmata at P 4.14.1–2 ~ S. 1.52.14–15 cite Empedocles, and then Leucippus (S only) Democritus Epicurus for the view that effluences (Empedocles), or images (the Atomists), move ‘away from us’ (ἀφ’ ἡμῶν—cf. Seneca, ‘from our bodies’, *a nostris corporibus*) to the mirror. (b) According to the third lemma, P 4.14.3 ~ S 1.52.16 those ‘from’ Pythagoras (S adds ‘and from the mathematicians’) believe that mirror images are seen because of the reflection of the eyesight, which returns to itself from the surface of the mirror.

<sup>397</sup> Pace Vottero (1989) 245–246 n. 2.

Ch. 4.13 is remarkable and enlightening also from another point of view. There are two authorial references to other versions of lemmata found elsewhere, or to other views concerned with the doctrinal contents of specific lemmata. At S 1.52.12 Empedocles is first said to provide a compromise between the two opposed views, viz. means of having visual impressions both ‘in relation to the doctrine that (sight comes about) by the rays’ (πρὸς τὸ διὰ τῶν ἀκτίνων), and ‘in relation to the doctrine (that it comes about) by images’ (πρὸς τὸ διὰ τῶν εἰδώλων), as we have seen above. Next, however, we read ‘more (say his view is) in relation to the second, for he accepts the effluences’ (πλείους δὲ πρὸς <τὸ> δεύτερον, τὰς γὰρ ἀπορροίας ἀποδέχεται).<sup>398</sup> The formula ‘the second’ pertains to the images that are received, and what in effect we are told is that a majority of those who deal with this matter refuse to attribute visual rays to Empedocles and prefer the images, their argument being that he accepted the effluences.<sup>399</sup> This is a reference to an unnamed source, or sources. For Empedocles on effluences see also the next and correlated chapter, A at P 4.14.1 ~ S 1.52.14, and for the effluences as preferred to images an anonymous and corrupt lemma in an earlier chapter, A 4.8 (4.8.11 Diels) at S 1.50.13.<sup>400</sup> In relation to Empedocles the contrast, we believe, ultimately goes back to Aristotle’s comments on the fragment on the eye quoted (and thus preserved) by him:<sup>401</sup> at one time, he says, Empedocles explains sight by means of

<sup>398</sup> We take πλείους as masculine nominative plural (cf. e.g. P 1.22.2 ~ S 1.8.45) though it can be feminine accusative plural. This possibility does not seem to have been noticed by scholars, who took πλείους to be connected with ἐκδοχάς. See e.g. the translations of Torracca (1961), ‘ma piu spesso[?] nel secondo modo’, Bollack (1969) 154, ‘mais le plus souvent il [i.e. Empedocles] a recours à la deuxième explication; car il admet des effluves’, and of Inwood (2001) 204 ‘both by rays and by images, but more of[?] the latter’.

<sup>399</sup> For the formula cf. Plu. *Qu. Conv.* 7.9, 731B, ἐρρύησαν δὲ πῶς μᾶλλον οἱ πλείους ἐπὶ τὸ δεύτερον, Gal. *MM* 10.713.11 K., μετίωμεν δὴπον πρὸς τὸ δεύτερον αὐτῶν μέρος.

<sup>400</sup> Corrupt part of the text as restored by Diels and Wachsmuth: ἑτεροιώσει (ἦ) ἐν ψυχῇ τυπώσει. Diels said ‘quid in πάντα μάλλον latet nescio’, but this is clear enough. Torracca translates ‘in ogni modo per emanazione piuttosto che per simulacri’. The beginning of the lemma remains difficult. A phrase in a corrupt lemma, if pertaining to Empedocles as Diels believed, also seems to refer to the interpretation of the minority, P 5.12.3 (the context is different): ‘according to impressions of streams and rays, not of images’ (κατὰ ῥευμάτων εἰσκρίσεις καὶ ἀκτίνων, οὐκ εἰδώλων). Also cf., in the chapter ‘On colours’, Empedocles’ definition of colour as ‘what fits into the passages of the eye’ (τὸ τοῖς πόροις τῆς ὄψεως ἐναρμόττον, A at P 1.15.3 ~ S 1.16.1).

<sup>401</sup> Empedocles fr. B84 DK at Arist. *Sens.* 2.437b23–38a5. Alex.Aphr. in *Sens.* 23.8 says ‘he quotes his lines’ (παράτιθεται αὐτοῦ τὰ ἔπη).

fire issuing from the eye, at another by means of the effluences.<sup>402</sup> Later writers dealing with this issue either opted for the attribution of both these approaches, as in fact and to some extent Aristotle himself has done by listing them, while others emphasized the theory of effluences, which Aristotle perhaps suggests is more important for Empedocles than the other view (we know it is the only one attributed by Plato, *Meno* 76c–d). Apparently it is so well known that he does not have to document it with a quotation.

This difference of interpretation pertaining to doctrinal content is anyhow faithfully reported by A, and shows that he knew about and may even have consulted more than one doxographical source. That a doxa is not certain in the sense that diverging versions can be obtained certainly fits in well with A's parading of contrasting views. A parallel reference to a view not shared by everyone is in the second lemma of A 1.13 in the version of S 1.14.1k: 'Some people believe Heraclitus admitted specks prior to the One' (Ἡράκλειτος πρὸ τοῦ ἐνὸς δοκεῖ τισι ψήγματα καταλείπειν). 'Some people believe' is only in S, but there is no doubt that it belongs to A, and no doubt either that this is a rare attribution. This was noticed by Diels, *DG* 221, who rightly spoke of 'sources in disagreement', 'dissentientes scriptores' compiled by A, but only took notice in order to condemn A's working methods. The disagreement is implicit rather than obvious, because elsewhere in the *Placita* there is no trace of this purported Heraclitean doctrine. We note that P not only omitted 'some people believe' but also to some extent altered A's text.

The references in A at S 1.14.1k and 1.52.12 to unnamed people providing an alternative reading of a tenet are also important for the interpretation of comparable references to named sources that are said to provide an alternative reading, or a particular interpretation, especially those including the title of the work at issue. This is a question to be treated separately below, Section 18, though we may already suggest that it is unwise to elevate an authority into a source of more than (the part of) the lemma in which he is cited.

Another difference of view, one of a different kind, viz. relating not to content but to name-labels in A ch. 4.13 is found at S 1.52.6 (no

<sup>402</sup> Note that we are not concerned here with the question as to whether Aristotle was right in identifying the fire in the eye with the visual rays, but with various traditions of interpretation. Thphr. *Sens.* 7 mentions both the fire in the eye comparable to the light of a lamp, and the colours traveling towards it as effluences.

parallel in P): ‘Some people also add the name of Pythagoras to this *doxa*, because he is an authority for mathematics, and to him (they add) Parmenides, who shows this in his verse’ (ἔνιοι καὶ Πυθαγόραν τῇ δόξῃ ταύτῃ συνεπιγράφουσιν ἅτε δὴ βεβαιωτὴν τῶν μαθημάτων καὶ πρὸς τούτῳ Παρμενίδην ἐμφαίνοντα τοῦτο διὰ τῶν ποιημάτων).<sup>403</sup> The tenet at issue is that of the *mathêmatikos* Hipparchus described in the preceding lemma, P 4.13.3 ~ S 1.52.15. This remark refers to a difference that must have existed between sources abstracted by A, or more probably by one or more of his doxographical predecessors: some read ‘Hipparchus’, others ‘Pythagoras Parmenides Hipparchus’ *vel sim*. It does not often happen that one is able to look over A’s shoulder. If he took over the two lemmata at S 1.52.5–6 lock, stock, and barrel from a predecessor, we are granted a look over this predecessor’s shoulder. As we have just seen the first of these two lemmata is also extant at P 4.13.3. The epitomator this time omitted to refer to a plurality of transmission, because it was superfluous for his purpose.

We should acknowledge that the reasons cited for the added names differ. An argument, of Neopythagorean provenance no doubt, brings about the addition of ‘Pythagoras’, while a reference to his poem justifies the addition of ‘Parmenides’. An earlier source, alas, may even have quoted from his poem.

What is quite intriguing and also rather surprising is that A here seems to attest to the existence of (a part of) a pre-Aëtian source resembling P: one name-label only, and of (a part of) another pre-Aëtian source resembling S: more than one name-label. This implies that the anterior tradition of *Placita* resembling A was already represented by a multiplicity of tracts and not by solitary *Vetusta Placita*, as Diels and, following him, others have assumed.<sup>404</sup> The *terminus post quem* of these works, or rather of such works as updates of earlier works, or of an earlier work, depends on the dates for Hipparchus’ activity, assumed to have taken place between c. 161 and 127 BCE. The still earlier *Placita* version cited by Chrysippus in the 3rd cent. BCE cannot have contained a reference to Hipparchus.<sup>405</sup>

<sup>403</sup> A rare active form of this verb (the present instance moreover is the only one in the *Placita*). One usually finds the medium, ‘to subscribe to’, ‘to indicate agreement’. We note that ποιήματα need not mean ‘poems’ in the plural.

<sup>404</sup> Cf. above, text to nn. 27 and 42.

<sup>405</sup> For the version cited by Chrysippus see above, n. 225 and text thereto.

We must go on, with the key term *doxa*. To illustrate Galen's remark on 'the *doxai*' quoted above from the first chapter of *De Consuetudinibus*, we may cite other references to this literature by the word *doxai* alone. That of Athenagoras, giving the views of Plato, Aristotle, and the Stoics concerning the deity, is rather famous: 'I have turned to the opinions' (ἐπὶ τὰς δόξας ἐτραπόμην, *Legatio* 6.2).<sup>406</sup> Note that in the next chapter (*Leg.* 7.2) he speaks of the disagreement among the philosophers who come up with 'different tenets concerning and God and Matter and the Ideas and the cosmos' (ἄλλος ἄλλως ἐδόγματισεν αὐτῶν καὶ περὶ θεοῦ καὶ περὶ ὕλης καὶ περὶ εἰδῶν καὶ περὶ κόσμου), thus first listing the three Middle Platonist principles also represented by topical chapters in A Book I, and then the general subject of A Books II and III (and 4.1). Also compare Plutarch on the 'doxai about the face of the moon everyone talks about' (*De Facie* 920B), and, e.g., the 'Stoic *doxa*' (921E) concerned with this topic (which is the subject of 2.30\*, 'On its [sc., the moon's] appearance').<sup>407</sup> We note also the rather funny passage in the *De Sollertia Animalium*, 975D: 'do not worry: [...]; I shall not introduce opinions of philosophers (δόξας φιλοσόφων) or myths of Egyptians or unattested tales of Indians or Africans'. Alexander of Aphrodisias in the *De Fato*, 164.21–65.1, summarizing and simplifying the main contrasting views on fate, says 'each of the two *doxai*' (τῶν δόξων ἑκατέρω).

In the *Placita* the word δόξα is not often used in this terminological 'doxographical' sense. In the chapter on the principles already referred to above, A at P 1.3.11, we have: 'Socrates son of Sophroniscus, Athenian, and Plato son of Ariston, Athenian—for the tenets of each of these are the same about everything (αἱ γὰρ αὐταὶ περὶ παντὸς ἑκατέρου δόξαι)—(declare that there are) three principles, God Matter Idea'. Socrates and his credentials as well as the Greek phrase about the δόξαι we have quoted are found only in P, not in the parallel version at S 1.10.16a. Diels believed these words to be an interpolation in an ancient copy of P and so relegated them to the apparatus criticus in the *DG*. Mau in his edition of P did not, and rightly so. That Q has preserved these words in the Arabic translation of P is not so important. But Socrates and Plato are also mentioned together in the same context in another representative of the doxographical tradition, viz. in the chapter on the principles of A's cousin writing Achilles *On the All* dis-

<sup>406</sup> Cf. Vol. 1:312. *Leg.* 6 is related to A 1.7, not (*pace* Diels) derived from it.

<sup>407</sup> See Part II, Spec. Rec. ch. 30, sect. 6.

cussed above, Section 10.<sup>408</sup> What is more, P gives the patronymic and ethnonicon not only of Plato but also of Socrates, while S omits Plato's ethnonicon. It is entirely unlikely that P added the meticulous credentials. No doubt S left something out.<sup>409</sup>

For *doxa* in this sense see, at any rate, the authorial comment ch. A 4.13 at S 1.52.6 already cited above, 'to this *doxa* some people add Pythagoras [...] and to him Parmenides [...]'. For the term compare also A at P 1.3.7 (*DG* 283a7, not paralleled in S), 'this is the *doxa* of many people' (πολλῶν ἐστὶν ἡ δόξα), and at P 1.7.1 (1.7.2 Diels, again not paralleled in S), where Euripides introduces Sisyphus as a champion of the *doxa* that there are no gods. The formula φυσικῶν δογμάτων occurs in various versions of P's title. There are also verbal varieties: A at P 1.6 (1.6.11 Diels), 'they opined' (ἔδοξεν αὐτοῖς), 2.29.5\*, 'some who opined' (τινες οἷς ἔδοξε, words extant only in S), P 1.5.3, 'Plato attests his opinion, that ...' (Πλάτων δὲ τεκμαίρεται τὸ δοκοῦν, ὅτι κτλ.).<sup>410</sup>

This use of the term δόξα, and the collection and presentation of brief *doxai* concerning a specific theme, in the main go back to Aristotle, as we have seen.<sup>411</sup>

The term γνώμη, perhaps more familiar as expressive of an ethical point of view, occurs three times in the *Placita* as an equivalent of *doxa*. At 2.17.4\* (lemma in S only) A could be taken to say that Diotimus of Tyre 'introduced the same point of view as these men' (τὴν αὐτὴν τούτοις εἰσηνέγκατο γνώμην), i.e. as those mentioned 2.17.2–3\*. But it is better not to insist on this, for τὴν αὐτὴν γνώμην εἰσφέρειν means 'to contribute the same proposal', i.e. simply 'to agree'.<sup>412</sup> At P 1.3.1 (text as in E) we read: 'therefore Homer too posits this opinion on the water: "Ocean, who is the origin of all things"' (ταύτην τὴν γνώμην ὑποτίθεται περὶ τοῦ ὕδατος + *Il.* 14.246).<sup>413</sup> 'Therefore': for the same reason, purportedly, as Thales in the first part of the lemma; a similar case of agreement, expressed in similar idiomatic fashion. Finally, in A

<sup>408</sup> Ach. *Intr.Arat.* 3 p. 31.11–13 Maass ~ 9.18–20 Di Maria.

<sup>409</sup> See above, text to nn. 166, 209. As far as the tradition for P is concerned the presence of the name-label Socrates is confirmed by Q, see Vol. 1:156.

<sup>410</sup> For the synonyms ἀρέσκει and ἀρέσκοντα see above, n. 64.

<sup>411</sup> See above, n. 334, and Section 14. And of course Bonitz *v.* 203b14–37.

<sup>412</sup> Cf. Hdt. 3.81, 'Otanes contributed this proposal' (Ὀτάνης μὲν δὴ ταύτην [τὴν] γνώμην ἐσέφερε); the formula from the dicasts' oath e.g. Arist. *Rhet.* 1.15.1375b16–17 'according to the best judgement' (γνώμη τῇ ἀρίστη), Harp. *v.* προχειροτονία, Gal. *Bon.Mal.Suc.* 6.757.5–6 K.

<sup>413</sup> Cf. Hdt. 3.80, τίθεμαι ὧν γνώμην.



at P 1.7.1 (1.7.2 Diels) we read: 'Euripides the tragic poet ... introduced Sisyphus as defender of that view (ταύτης τῆς δόξης, viz. the tenet that the gods do not exist), and seconded the following opinion of him' (καὶ συνηγόρησεν αὐτοῦ ταύτη τῇ γνώμῃ· quotation of Critias fr. 25.1–2 DK follows). The idiom<sup>414</sup> is again that of a meeting, or discussion, where proposals are formulated and voted upon, accepted or rejected.

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<sup>414</sup> Cf. Lib. *Or.* 1.94, 'I also persuaded a man with influence at court to back the doctors' opinion' (πεῖθω πάλιν τινα ἐν βασιλείοις δυνατῶν τῇ τῶν ἰατρῶν γνώμῃ συναγορεύοντα).

## 17. Chapter Headings

*Summary.* The *Placita* are one of the earliest extant Greek treatises with numbered chapter headings in the text itself. We argue that these headings are not only genuine but also very functional. They are genuine because they are indispensable in some cases. Without their headings a number of chapters would be extremely hard to understand. Moreover, without the headings confusion between the contents of the short and compact successive chapters of the *Placita* would be difficult to avoid. In a few cases confusion has occurred in spite of the headings. Numbering of items can be paralleled from other technical literature, so the chapter numbers are likely to be authentic as well. Thus the *Placita* also provide an important though neglected contribution to the evidence for the discussion about the when and why of the earliest embedded chapter headings. Examples of what we may call proto-headings announcing or concluding the treatment of an issue are easily found, for instance in Aristotle's treatises, where they are embedded. Indications of subjects or themes found in earlier writers, or even titles given or referring to treatises, are often parallel to chapter headings in the *Placita*. We may also compare the headings pertaining to groups of poems in the Posidippus papyrus. It should be recalled that both Plato and Aristotle recommend collecting abstracts from the literature under specific headings.

There are in total over 130 chapter headings in A. We cannot, of course, here deal with them all, and shall limit ourselves to representative examples. A preliminary discussion is found in various places of Volume I of the present study.<sup>415</sup> One of the issues we focused on there was concerned with the variation in formulation of the headings as to both length and wording in the various sources for A, in some cousin writings of A, and in P and its tradition. We have in fact come across quite a few examples of this diversity already in the previous Sections when citing headings of individual Aëtian chapters.

In the earlier Volume we were impressed by the fact that in the few scraps of P preserved in a 3rd-cent. Papyrus from Antinoöpolis there is no room for the longer headings sometimes found in P<sup>416</sup> (e.g. those of

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<sup>415</sup> Vol. I:127, 137, 143, 158, 180–181.

<sup>416</sup> Assuming that the reportage of the Byzantine mss. in Mau and Lachenaud is correct.

chs. 4.12, 4.20, 4.23, all cited in earlier Sections above) in contrast to S, but only for the bland ‘On (the) *x*’ type, which is perhaps the most generally used formula for a title or heading in both Greek and Roman literature. Above we have also encountered important examples of this short ‘on (the) *x*’ formula in the chapter of Aristotle’s *Topics* discussed in Section 14, and in the description of the Stoic *physikos logos* discussed in Section 8.

In the earlier volume this made us wonder whether originally A had only such short headings (as even P still has in most cases), just as S and E do, as a rule. But in S these shorter headings can be part of the title of a chapter which coalesces a number of topics to which A devotes separate chapters, and S of course takes his material from other sources than A as well. A collective title of this kind coalesces the headings of these chapters, S sometimes even adding other topics relating to his further material, with obvious preference for brevity (and so for abridgement), though this preference is not always decisive. E, as we noted in our earlier volume, may on occasion abridge a heading he found in P, so does not prove that headings grew bigger in the later tradition of P. Consequently these two witnesses, E and S, cannot be decisive regarding the issue of length and wording of headings in A.

We now believe that in this fluid tradition the length and precise wording of the chapter headings were not a matter of rigorous discipline, but rather of convenience. Q, as we already noticed in the earlier volume, sometimes goes his own way. Long descriptive headings may be found in both P and S, e.g. P 3.16 ~ S 1.37, ‘On the sea, how it came to be and how [i.e. why] it is bitter’, instead of only the bland heading ‘On the sea’ (but note that Photius’ index only has the latter). Several chapter headings in Book V are of the longer kind in both S and P, as we know for S most of the time thanks to Photius, see e.g. the titles of A 5.11 at S 1.42.7, 5.12 at S 1.42.8, 5.20 at S 1.43, and 5.26 at S 1.45.

It is a well-known fact that the evidence at our disposal regarding the use of book titles and more specifically the references to books by means of their title or theme in antiquity shows that some latitude of wording and specification was the rule rather than the exception, as we shall also see below. This also holds for embedded references to topics to be treated, or that have been treated. In Aristotle *Topics* 1.14.105b14–15, as we saw in Section 14 above, the topics cited as examples of themes to be used in the context of a debate are brief: ‘on the good’ (περὶ ἀγαθοῦ—cf. in the catalogue of Diogenes Laërtius 5.23 no. 69 the lost collection of *Propositions on the Good*), or ‘on the animal’ (περὶ

ζόφου). Longer versions are also found, e.g. announcements in the *Physics* of the discussions of place (περὶ τόπου, *Phys.* 4.1.208a27–29, ‘on place whether it exists or not, and in what sense it exists, and what it is’), the infinite (περὶ ἀπείρου, 3.4.202b35), and void (περὶ κενοῦ, 4.6.213a13).<sup>417</sup> The *Placita* in these cases have short headings: 1.18 περὶ κενοῦ, 1.19 περὶ τόπου (no chapter on the infinite).

Nevertheless, on balance it might seem to be more likely that P originally in some cases preferred longer headings. It is perhaps an attractive thought that by sometimes lengthening the headings or changing their wording in other ways, thus making them more descriptive of the contents, P may have tried to compensate for material he omitted. But there are also cases where it is S who has a longer and more informative heading, as e.g. for ch. 3.9, where as we have seen in Section 9 above S 1.33 (the lemmata are lost) adds to the bland ‘On the earth’ the specification ‘whether there is one, and finite, and of what size’—the chapter on the earth’s size, as Diels already saw, having been abridged away by P.<sup>418</sup> For 3.13 S’s heading at 1.35 ‘Whether the earth is immobile or moves’ is more informative than P’s ‘On the movement of the earth’. And though it is anybody’s guess which particular member of the broad doxographical tradition Galen had in mind when he referred to the doxai relating to the topic ‘How we see’ (perhaps he thought of several, or of none in particular), the fact remains, as we have seen in Section 16 above, that he refers to this issue by means of a reference to its doxographical background and a quotation of the second part of the long heading of A 4.13, extant in P and not in S, while both P and S repeat this formula in the last lemma of the next chapter, A 4.14, so attest to its Aëtian authenticity. And Galen, we saw, is not the only one to cite the issue with this designation. Accordingly, in some sense of the word ‘original’ the long version of the heading of 4.13 in P is original.

<sup>417</sup> For some examples of relatively long announcements and summarizing phrases in the *Meteorology* parallel to similar *Placita* headings see e.g. the beginning of the chapter *Mete.* 2.9.369a10–11, ‘We must speak of lightning and thunder, and then whirlwinds and firewind and thunderbolts’ (an abridged version of this phrase appears as heading of A 3.3); the ending of this chapter, 370a32–33, ‘thunder and lightning have been dealt with’. Beginning of treatment of earthquakes ch. 2.7.365a14, ‘We must next deal with earthquakes and (earth) movement’; and 8.369a7–9, ‘the earthquakes, and what their nature is, and through what cause they come to be, and their most important attendant circumstances, have been dealt with’ (cf. heading of A 3.15). Cf. above, text to n. 92, and see also below, nn. 419, 420 and text thereto.

<sup>418</sup> *DG* 62.

To the best of our knowledge the Aëtian evidence is never mentioned in the literature dealing with book titles and chapter headings. Yet this material is important, not only for the *Placita* itself but also in a wider context. In P the chapter headings are *numbered* according to the 27-letter system: in Book I from 1 to 31, in Book II from 1 to 31, in Book III from 1 to 18, in Book IV from 1 to 23, and in Book V from 1 to 30 (the proems to Books I–IV are not included in the numbering). Each book begins with a table of these numbered κεφάλαια. Other explicit evidence for numbering of chapters is virtually nonexistent in the early 2nd century CE. The papyrus does not help much for A because, of course, it is evidence for P not A, and moreover dates to the 3rd century. The fragments contain two numbers: an ι (for 10), corresponding with the first character of the chapter number of 3.16, while μβ i.e. 42 as chapter number for 5.4 remains a bit of a riddle.<sup>419</sup> Even so the case for P's chapters having been numbered from the outset is strengthened. So we may perhaps assume that P's numbering derives from A, because P is after all an epitome of A, though even if this were to be the case we can be certain that the actual numbers do not always correspond, for P sometimes coalesced chapters, e.g. 2.4a\* at the end of 2.4\*, or may have omitted them, as apparently he did a chapter on the size of the earth in Book III. In the *Specimen Reconstructionis* in Part II we

<sup>419</sup> The Elder Pliny's tables of contents consisting of formulas similar to chapter headings denoting subjects, now all collected in Book I, are authentic, but there are no intra-textual headings in the encyclopedia itself. Note that Schröder (1999) 115–116 argues that Pliny numbered the chapters (the recent Loeb and Teubner editions number them, but the old Teubner edition of Mayhoff does not), and 107 quotes Scribonius Largus (ca. 50 CE) who numbered his prescriptions and *disertis verbis* says that this is what he has done, praef. 15 *numeris notavimus*. Needless to say, numbering is different from adding up, one of Pliny's favourite sports. Poems in Martial Books XIII and XIV had titles; see 13.3.7, 'each item identified by its title', *addita per titulos sua nomina rebus*, and 14.2.3, 'added headings', *lemmata ... adscripta* (tr. Shackleton Bailey). As precedent for A one may refer to the numbering of propositions by Euclid, who used letter labels including digamma for 6, and 'established the practice' for other mathematicians (Goldstein (1968) 270). For an example of numbered propositions in Apollonius of Perga cf. above, n. 103. The mss. of Euclid do not agree as to the numbering of the definitions, postulates, and common notions (some do not have them, and so also the Arabic translation), but Heiberg and Stamatis print the numbers in their Teubner text. Evidence for an approximate line number to refer to a passage (rather than a number of lines to indicate length) is relatively rare, e.g. D.L. 7.33, 187–188 (κατὰ τοὺς (number) στίχους), and the references 'circa vers. + (number)' in Asconius' *Commentaries* on Cicero; see Schofield (1991) 6–7 with n. 11. Such references by ascending line numbers show that the works in question were not divided into chapters. For chapters omitted or coalesced in P see also Vol. 1:184, for the traces of chapter numbers in the Antinoöpolis Papyrus *ibid.* 127–128.

have preserved the numbers of P, repeating the number of the original chapter in P and adding the letter a (e.g. ch. 2a\*) when chapters in P decoalesce.

Evidence for intra-textual headings, i.e. headings inserted in the text itself, is also rare for the early period. Schröder, quoting examples from Cyprian and Augustine (so no early ones), rightly points out that intra-textual headings are certain only when they are indispensable for the understanding of the text.<sup>420</sup> In A's case we of course have the parallels for P's headings in Photius' table of contents of S and in later ms. sources for S, but experts do not seem to agree on the question of what came first, tables of contents or intra-textual headings. The fact that Pliny the Elder abundantly has the former and lacks the latter suggests that tables of contents came first.

We can in fact prove that the intra-textual headings of A are genuine, since they are in several cases indispensable. In 2.7\* the heading (in both P and S) 'On the ordering (τάξεως) of the cosmos', though failing to cover the full subject matter of the chapter's lemmata, is indispensable. The first lemma, 2.7.1\* with name-label Parmenides (much longer in S than in P) is virtually incomprehensible without the help of the heading. The word τάξις occurs for the first time in its penultimate lemma, 2.7.6\* with name-label Philolaus. The word κόσμος occurs for the first time in its second lemma, name-label Leucippus plus Democritus. The heading of 2.18\*, 'On the stars that are called the Dioscuri', is indispensable in the two lemmata in P, while S has added the words

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<sup>420</sup> Schröder (1999) 125. Euclid's intra-textual terms at the beginning of the work: ὅροι heading the series of definitions, αἰτήματα heading the series of postulates, and κοινὰ ἔννοιαι heading the series of common notions all resemble inserted chapter headings, and are supported by ms. evidence. Arguably, these headings (ὅροι, αἰτήματα, κοινὰ ἔννοιαι) are indispensable for understanding what comes under them. There is an important formal parallel in the Milan papyrus (late 3rd cent. BCE? at the latest 1st cent. BCE) of Posidippus, where groups of poems are announced by headings such as λιθικά, οἰωνοσκοπικά, ἀναθηματικά; these are placed in the middle of the page as one can see when checking the diplomatic version in the *editio princeps* of Bastianini & Galazzi (2001), and are quite helpful for understanding what the poems are about. Unnumbered but intra-textual headings in Achilles and Nemesius, but in Di Maria's and Morani's editions no table of headings (*pinax*, *table de matières*, table of contents, *Inhaltsverzeichnis*) at the beginning. Tombeur (1997) demonstrates that editions of works in Latin are in principle unreliable where material relating to tables of contents, headings, and titles is concerned, and points out that checking for instance manuscripts and early editions is always a must. One supposes that for works in Greek the situation is the same. We can here only follow such editions as are available, which for P means Mau and Lachenaud, and for S Wachsmuth.

‘which some people call Dioscuri’ to his lemma to compensate for the disappearance of the heading in his new arrangement. The heading of 2.26\*, ‘On the size of the moon’, is indispensable, because the word ‘moon’ does not occur in the lemmata. So is the heading of 2.29\*, ‘On the moon’s eclipse’, since the words ‘eclipse’ and ‘moon’ (in that order) occur for the first time in the seventh lemma, 2.29.7\*, though the term ‘full moon’ (πανσέληνον) at 2.29.5\* is somewhat helpful. In 2.28\*, ‘On the illuminations of the moon’ (thus P; S has abridged, and modified to ‘On her illuminations’, αὐτῆς), the heading is indispensable because otherwise the moon could not have been referred to with ‘her’, αὐτῆς, in the first lemma, 2.28.1\* (P; S has αὐτήν).

Also note 1.19, heading ‘On place’. Here P is able to dispense with the word τόπος in his two lemmata, while S 1.18.4c plus 18.1b had to add the words τόπον (εἶναι) from the title in the first as well as in the third lemma of the chapter as printed in Diels’ reconstruction in the *DG*. The Plato lemma (~ P 1.19.1) on *place* has been put by Stobaeus at 1.18.4c, after 2.9.1–3\* on *void* at S 1.18.4b, so the change of theme had to be made explicit. Similarly, the Strato lemma on *place* has been coalesced by him *without* name-label at 1.18.1b, 2nd text, after the lemma of A 1.18 at S 1.18.1b, 1st text, *with* name-label: Strato on *void*; here too the change of topic had to be made clear.<sup>421</sup>

We do not need to add further examples, and may infer presence in all cases as a necessary consequence of indispensability in some. An additional argument is that a treatise such as A’s, which is necessarily divided into brief thematic chapters, owes this division to the headings, just as, reciprocally, the collection into a small compass of bits of information pertaining to a specific topic as part of a wide spectrum is in need of distinguishing headings. The reader must be prevented from slithering from one theme to another and chapters from becoming confused. In a few cases confusion has occurred in spite of the headings, e.g., in the case of A at P 3.12.4 instead of in ch. 3.4.14 Pliny’s cosmology (Book II) is a continuous text with literary pretensions, and works quite well without chapter headings. But without such aids a technical work like A would be virtually impossible to use. In other words, chapters are created by adding separate headings and, eventually, numbering, just as

<sup>421</sup> The same change of topic is visible at S 1.18.1c, where an Aëtian lemma is followed by and so coalesced with an AD fragment (as Diels already suspected, though he printed the whole passage in his text of A). The A section is on *void*, the AD section mostly on *place*. Diels’ reconstruction of A 1.18–19 is somewhat unfortunate.

in earlier (and later) phases of the history of books sections of a work were demarcated by announcements and summaries.

As to the topics designated in the headings we have insisted time and again in the course of our inquiry that the issues concerned are often already formulated in the same way in earlier literature, or in virtually the same way, for instance in the summarizing sentences or brief references to other treatises by means of their topics in Aristotle's physical treatises, or according to the briefly formulated subdivisions of the Stoic *physikos logos* (see above, Section 8). The important fact about such short or somewhat longer formulas is that they can also be used to refer not only to what came before, or to what immediately follows (as is usual for a heading at a chapter), but also to something beyond an actually given context. And they can be embedded as well as separate. Examples of such passages where 'eorum fit mentio quae proxime vel antecedunt vel sequuntur',<sup>422</sup> as well as of proto-titles or proto-headings in Aristotle,<sup>423</sup> then again figuring as chapter headings in the *Placita*, have been cited in earlier Sections, where we have also adverted to the role played by the Aristotelian categories and types of question for the formulation of headings, and for successions of subtopics dealing with the diverse aspects of a major topic, such as the cosmos, or the soul, as formulated in headings relating to existence, substance, quantity, quality, cause, doing and being-affected, etc. We may see intra-textual chapter headings both as embedded designations of a theme at hand that, so to speak, have been emancipated, and as look-alikes, on a smaller scale, of book titles.

A few further examples, represented by Aëtian chapter headings from outside Book II, of traditional themes, or widely discussed issues, occurring even in the form of book titles, can be added to the various examples of this affiliation already encountered here and there in the course of the present inquiry. For 1.5, 'Whether the All is one' (εἰ ἐν τὸ πᾶν) compare Isocr. *Hel.* §3, ὥς ἐνὸς ὄντος τοῦ παντός (quoted above, Section 13), Plato *Sph.* 244b, παρὰ τῶν ἐν τὸ πᾶν λεγόντων (the Plato passage is referred to Plu. *Def.* 428c), Arist. *Phys.* 1.2.185b7, σκεπτέον τίνα τρόπον λέγουσιν εἶναι ἐν τὸ πᾶν, 1.5.188a20, Thphr. fr. 227c FHS&G ~ *Phys.Op.* fr. 6 Diels *ap.* Alex.Aphrod. in *Met.* 31.11–12, κατ' ἀλήθειαν μὲν ἐν τὸ πᾶν, Philo *Leg.All.* 3.7, ἐν τὸ πᾶν [...] εἰσάγων, Plu. *Col.* 1114A, ὥστε καὶ ὑμῖν ἐν τὸ πᾶν ἐστίν. The heading of 1.15,

<sup>422</sup> Bonitz 95b33.

<sup>423</sup> Bonitz v. Ἀριστοτέλης, 97b41–102a14. Cf. e.g. above, nn. 90, 417, and text thereto.



‘On colours’ (περὶ χρωμάτων) echoes the title of an extant pseudo-Aristotelian treatise, and of a lost one by Strato (D.L. 5.59). For 1.23, ‘On motion’ (περὶ κινήσεως) cf. Arist. *An.Pr.* 95b11, ἐν τοῖς καθόλου περὶ κινήσεως, referring to books of his *Physics*, cf. e.g. *Cael.* 272a30–31, *EN* 1174b2–3, *GC* 318a3; the Hellenistic catalogue of Aristotle *ap.* D.L. 5.23 lists as no. 45 a lost collection of *Propositions on Motion* (Προτάσεις περὶ κινήσεως α’), which may have contained material now found in A; fragments of Theophrastus are quoted with the title *On Motion* (Περὶ κινήσεως), see above;<sup>424</sup> and it is the title of a work by Strato, fr. 34 W. *ap.* Simp. in *Phys.* 916.13, and of one by Chrysippus, e.g. Plu. *SR* 1053E. For 1.27, heading ‘On fate’<sup>425</sup> (περὶ εἰμαρμένης) quite a few instances of this formula as a book title can be cited as parallels: it is attributed to Xenocrates (D.L. 4.12), to Epicurus (e.g. D.L. 10.28), to Chrysippus (e.g. S 1.5.15, D.L. 7.149), to Posidonius (e.g. D.L. 7.149), to Boethus (D.L. 7.149), and to Philopator (Nemesius *De Natura Hominis* 34, p. 106.9–10 Morani). As to extant books, we have Cicero’s *De Fato*, ps.Plutarch Περὶ εἰμαρμένης, Alexander of Aphrodisias Περὶ εἰμαρμένης, and one of Plotinus’ essays, *Enneads* 3.1 (Porphyry, *Vita Plotini* 4.26—title given by Porphyry). We have ch. 26 in Alcinous (embedded heading in first sentence: περὶ δὲ εἰμαρμένης τοιαῦτά τινα τῷ ἀνδρὶ ἀρέσκει), and ch. 34 with intra-textual heading περὶ εἰμαρμένης in Nemesius.

A full range of examples of traditional and widely discussed issues in the realm of cosmology represented by Aëtian chapter headings are of course to be found in the collections of dialectical-doxographical parallels at the end of the reconstruction of each chapter of A Book II. Here we may end with some examples of designations of issues in physics in rhetorical writings, where problems of a general kind, the so-called *quaestiones infinitae*, or *theseis*,<sup>426</sup> are said to be the property of the philosophers. Hermagoras fr. 6a Matthes at Cicero *De Inventione* 1.8 lists four instances of a θεῖσις, one of which is concerned with ethics and the other three with physics: ‘Are the senses true?’ (cf. A 4.9); ‘What is the shape of the cosmos?’ (cf. 2.2\*); ‘What is the size of the sun?’ (cf. 2.21\*), *verine sint sensus? quae sit mundi forma? quae sit solis magnitudo?* Examples in Quintilian, *Institutio Oratoria*: 3.5.6, ‘Whether the cosmos is

<sup>424</sup> n. 346.

<sup>425</sup> Useful overview of the discussion of this subject before Alexander in Sharples (1983) 3–14.

<sup>426</sup> See Mansfeld (1990a) 3193–205, (1992a) 77–82, esp. 79, where it is observed that *quaestiones* may correspond to headings in A.

administered by providence' (cf. 2.3\*), *an providentia mundus regatur* (also *Inst.* 7.2.2, *in generalibus* [scil., *quaestionibus*]: *an atomorum concursu mundus sit effectus* ['whether the cosmos has been produced by the coming together of atoms', cf. 2.2\*], *an providentia regatur*). Also 7.2.6, 'one world or more than one?' (cf. A 1.5, 2.1\*), *unus mundus an plures?*, 7.4.1 *an unus mundus?*; 7.2.6 'is the sun larger than the earth?', *an sol maior quam terra?* and 7.4.1 *quantus sol?* (cf. 2.21\*); 7.2.6 'is the moon spherical or flat or pointed?' (cf. 2.27\*), *luna globosa an plana an acuta?* Examples provided by the *Progymnasmata* 15.22–24 ascribed to Hermogenes are 'whether the cosmos is spherical (cf. 2.2\*), whether there are many kosmoi (cf. A 1.5, 2.1\*), whether the sun is fire (cf. 2.20\*)' (εἰ σφαιροειδῆς ὁ οὐρανός, εἰ πολλοὶ κόσμοι, εἰ ὁ ἥλιος πῦρ). He adds 'these suit the philosophers' (αἶδε μὲν οὖν φιλοσόφοις ἀρμόζουσιν). Not the rhetoricians ...

## 18. Chapter and Verse: *Abstracts, References, and Quotations*

*Summary.* In the final section of this first Part of Volume II we study the quotations, and quasi-quotations, found in the *Placita*. Explicit quotation, including a reference or at least a name, is a feature of philosophical writing and discussion. Quotation proves that the writer has taken the trouble to inform himself, or wants to make a serious and professional impression. No doubt the majority of Aëtius' explicit quotations are inherited from the tradition. Indeed most of his lemmata can be regarded as tantamount to quotations, because of their explicit or implicit verbs of declaration. We have to realize, however, that contents are not only modified (or distorted) because of adaptation or modernization (or error), but may also be 'misquoted' on purpose. A quote has to be adapted to the style, purpose, and context of the writer who makes the quotation, and quoting *verbatim* may be considered inelegant. Aëtius' usage of various verbs of declaration are studied, including the use of 'says he' found in the middle of a text purporting to be quoted. We also study his references to terminological inventions. 'Misquotations' found elsewhere are compared with the way the *Placita* summarizes the main points of Anaxagoras' treatise. We note that intermediary authorities are not only quoted as sources for a specific tenet, but also as the source of an alternative version of a specific tenet. An interest in alternative versions occasionally makes itself felt. Diels believed that the quotation of Theophrastus as the source for a tenet of Xenophanes in 2.20 proved a Theophrastean treatise to be the ultimate source of the *Placita* and the related doxographical literature. But in ch. 2.20 Theophrastus is quoted for a version of a tenet that is significantly different from the mainstream varieties of this tenet attributed on several other occasions to Xenophanes elsewhere in the *Placita*.

In his account of Epicurus' works Diogenes Laërtius tells us that the number of volumes involved amounted to about three hundred, and that in these 'not a single quotation from somewhere else has been written out (γέγραπται δὲ μαρτύριον ἔξωθεν ἐν αὐτοῖς οὐδέν); they are Epicurus' own words.' Epicurus is contrasted with Chrysippus, who tried to emulate him, 'and in his hurry repeated himself and just jotted things down, and left things unrevised, and there are so many quotations that they alone fill his books, just as one finds in Zeno and Aristotle'.<sup>427</sup>

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<sup>427</sup> D.L. 10.26–27 ~ *Epic.* p. 85 Us., missed by von Arnim, printed Hülser (1987) as *FDS* fr. 157.

Much the same information is found in Diogenes Laërtius' introduction to the catalogue of Chrysippus' works: he is said to repeat himself, to write down whatever occurred to him, to leave things unrevised,<sup>428</sup> and to being so generous in adding quotations (μαρτύρια) that someone reading one of his works, when asked what it was, said 'Chrysippus' *Medea*'. Diogenes then cites Apollodorus, who said Epicurus' books did not contain quotations (ἀπαράθετα ὄντα), and that 'if one were to strip Chrysippus' books of all the extraneous quotations (ὅς' ἀλλότρια παρατίθεται), his pages will be left blank'.<sup>429</sup>

The term μαρτύριον, translated above as 'quotation', means 'testimony', 'evidence': quotations may serve as testimony in the course of an argument, discussion, or exposition. The verb παρατίθεσθαι, 'to put alongside', signifies the offering of such evidence in writing.<sup>430</sup>

To the best of our knowledge there is no paper or monograph dealing with Aristotle's quotations,<sup>431</sup> but one has only to thumb through one of the major treatises to come across quite a few of them, mostly in verse but sometimes in prose. Zeno of Citium quoted Hesiod and other poets in support of his own doctrines.<sup>432</sup> So did Chrysippus, *ad satietatem* as we saw. Epicurus was an exception. Quotations, references, are *de rigueur* in philosophical treatises, just as in mythographical and paradoxographical tracts:<sup>433</sup> 'to be able to cite impressive references (*marturia*) conferred prestige'.<sup>434</sup>

<sup>428</sup> The obvious correction D.L. 7.180 (μη) διορθούμενος (cf. 10.27 ἀδιόρθωτα) proposed Mansfeld (1986a) 300 has not percolated to Hülser (1987) *FDS* fr. 154, to the Teubner edition of Marcovich (1999), or the translation edited by Goulet-Cazé (1999).

<sup>429</sup> D.L. 7.180–181 ~ *SVF* 2.1. For Chrysippus' quotations see Tieleman (1996) 219–248, (2003) 51–58.

<sup>430</sup> On what of course were quotations from 'the poets and all other notable persons' (the Athenians 'appealing to Homer as a witness' (Ὁμήρω μάρτυρι ἐχρήσαντο) about Salamis, and the men of Tenedos to Periander in their dispute with the people of Sigeum), see Arist. *Rhet.* 1.15.1326b28–34. Compare the references to mythical stories for political purposes cited Cameron (2004) 223–227. On proverbs as μαρτύρια see *Rhet. ibid.*, 1.15.1376a2–4, one proverb quoted as an example.

<sup>431</sup> Such as there is e.g. for Plutarch, Helmbold & O'Neill (1959), a bare index without discussion. Much material in Bonitz under personal names, *vv.* Ὀμηρος, Ἡσίοδος, Ἡράκλειτος, Πλάτων, etc.

<sup>432</sup> *SVF* 1.100 (scholium on Hes. *Th.* 134, better text in di Gregorio (1975)), *SVF* 1.103–104, 274–276. Against the popular view that Zeno wrote a Commentary on Hesiod see the convincing argument of Algra (2001).

<sup>433</sup> For the mythographical literature see Cameron (2004) 89–123, for the paradoxographers *ibid.* 88–90, 158–159; for 'bogus citations' in this literature *ibid.*, 124–163.

<sup>434</sup> Russell (1973) 43. On tags and quotations at second etc. hand see Anderson (1976).

The quotations and references found in A are there because the treatise belongs with the tradition of philosophical writing. We cannot of course claim that his verbatim, or quasi-verbatim, quotations derive from his own reading of the literature. Quite the reverse: most if not all of A's reading will have been at second-hand, and in a number of cases verbatim quotations prove to have been cited long before by others. They clearly became part of the tradition. A number of times we can trace their pedigree, but not as often as we would like to. Even so, they serve to establish A's credentials as a professional. In this respect the parallel between A and citation-addicted Diogenes Laërtius is perfect.<sup>435</sup>

A preliminary overview of fifteen verbatim, or quasi-verbatim, quotations in A, including references to the works that are quoted, has been provided in an earlier publication, where poetic quotes 'merely introduced by *φησί vel. sim.*' were not discussed.<sup>436</sup> These quotations accompanied by references were divided into three groups:

- (a), reference to a report by another author on the main doxa (P 1.7.1; lemma of 1.18 at S 1.18.1c; 2.29.4\*; 2.29.8\*; P 5.7.5);
- (b), reference for an illustration or elucidation of the main doxa (lemma of 1.25 at S 1.4.7c); P 1.28.3 ~ S 1.5.15 (where more references than in P); P 1.30.1; S 1.23.2 ~ 2.11.5\* (A 2.11.3 Diels);<sup>437</sup> 2.19.3\*;<sup>438</sup> A 3.4.2 at S 1.31.4;<sup>439</sup> and
- (c), reference given directly for the main doxa (lemma of 1.27 at S 1.5.15; lemma of 3.17 at S 1.38.9).

What is lacking in this earlier overview, at least *disertis verbis*, is

- (d), reference to a named or anonymous authority for an alternative version of the main doxa.

<sup>435</sup> For Diogenes Laërtius see the classic study of Mejer (1978) 7–28.

<sup>436</sup> Runia (1992) 122–124. Diels writes on A's quotations in general *DG* 215–217, but refrains from dealing with the earlier adornments, concentrating on what he argues are additions by A.

<sup>437</sup> Reference to Aristotle's *Lecture Course on Physics* and *On the Heavens* in S, already bracketed by Diels (cf. *DG* 215–216) now not accepted for A, see Part II, Spec. Rec. 2.11.5\*.

<sup>438</sup> Explicit reference 'Aratus in the *Phainomena*' in S, not bracketed by Diels, now no longer accepted for A, see Part II, Spec. Rec. 2.19.3\*.

<sup>439</sup> Runia (1992) 123, including this passage because of the word *διασρηδην*, says 'no specific reference'. Therefore also the quotation of Empedocles fr. B6 DK at P 1.3.10 should be added to this list, which is introduced not just by *φησί* but by *φησί δὲ οὕτως*; or both references should be omitted from the overview.

An interesting complication is that most of the lemmata containing abstracts of doctrines, or reports about them, present themselves in the guise of citations, as appears from the terms of declaration or affirmation involved. We may list ἀποφαινόμενος ‘declaring’, ἀποφαίνονται ‘they declare’, ἀπεφάνετο ‘he declared’, εἶρηκε(ν) ‘he said’, εἰρημένον ‘called’, εἴρηται ‘is called’, ἐκάλεσε ‘he called’, ἐκάλουν ‘they called’, ἔλεγε ‘he said’, ἔλεγον ‘they said’, καλεῖ, (he) calls’, καλεῖται, εἶρηκεν ‘is called’, καλεῖν ‘to call’, καλεῖσθαι ‘to be called’, καλοῦσι(ν) ‘(they) call’, λέγει ‘he says’, λέγοντες, λέγων ‘saying’, λέγουσι(ν) ‘they say’, φησί(ν) ‘he says’/‘says he’, and φασί(ν) ‘they say’. Most of the time these terms are found (or implied) in the lemmata. They suggest that the authority quoted, or cited, or referred to, or named, has been *seen*, and thus lend an air of authenticity and reliability to the doxai that are described, and of intellectual honesty to the compiler. In this sense virtually every *placitum*, every doxographical excerpt, is a quotation. One should, however, realize that this referential terminology in itself does not guarantee historical exactitude or verbatim repetition, and may even not always be meant to warrant the latter. Misquotation, or rather quotation without literally following the original word for word, is a quite common phenomenon. Generally speaking people quoted from memory, and quotations came to be adapted to their new setting. Further distortion may occur when quoted lines or phrases are cited at second, third etc. hand, for it is difficult to repeat something precisely. Misquotation may also be practised on purpose, since to quote literally is not only less urbane but also more difficult, because the quoted phrase not only has to fit the host’s purpose but also his syntax.<sup>440</sup> And abridgement is the mother of transformation as we saw in Section 15, above.

What one should also realize, and as a glance at Bonitz’ *Index Aristotelicus* will show, is that this terminology of ‘saying’ or ‘declaring’ is also frequently employed by Aristotle, and a few searches in the TLG confirm its use by Theophrastus. The Peripatetics of course were not alone in using it; quite the reverse. A has inherited this vocabulary together with (most of the time) the quoted contents of the lemmata from the traditions he is also indebted to in other ways.<sup>441</sup> Cited views

<sup>440</sup> Whittaker (1989). Cf. Aulus Gellius 9.9.3 on adapting phrases from the Greek poets in Latin, a reference we owe to Francese (1999) 70: ‘they say that we should not always strive to translate all the words entirely in the way they are said’, *non semper aiunt entitendum, ut omnia omnino verba in eum, in quem dicta sunt, modum vertamus*.

<sup>441</sup> In Vol. 1:231–233 it has been argued that the forms ἔφησε ‘he said’, frequent in S and nowhere found in P, and other terms in S but not in P, i.e. ἀπεφαίνετο ‘he

in A (with the exception, as a rule, of quotations in verse) are not only adapted to the typically compressed and formulaic doxographical syntax, but also may be made to fit the diaeretic and diaphonic pattern of the doxographical chapter or set of chapters.

We cite and limit ourselves to a few examples, because full treatment would require a substantial paper, or even (and better) should be part of a Commentary on A. But we shall distinguish between various modes of quotation, or reference, in A, and largely ignore the quasi-quotations suggested by the use of verbs of declaration.

We begin with terminological matters, that is to say references to the (purported) introduction of technical terms, or of technical meanings given to current words. Both the forms ἐκάλεσε ‘he called’ and ἐκάλουν ‘they called’ are found only once, but in S as well as P: at P 1.3.4 ~ S 1.10.12 (*DG* 279a21–24, more briefly b20–22) we are told that Anaxagoras ‘called’, ἐκάλεσε, the ‘parts’ in nourishment ‘similipartials’, ὁμοιομερεῖαι, from their being similar to what is produced from them. This example of naming is suggestive of verbatim quotation. But we do know that Anaxagoras did not coin the term. It ultimately descends from Aristotle’s technical term ὁμοιομερῆ and is first found in fragments of Epicurus, and in relation to Anaxagoras for the first time in Lucretius, 1.830 and 834 *homoeomerian* (note the singular). Later we find it several times in connection with Anaxagoras in the doxographies. Lucretius may be believed to be dependent on a doxographical account.<sup>442</sup> What happened is that an Aristotelian technical term, a substantivized adjective in the plural also applicable to Anaxago-

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declared’, ἔφασκε, εἶπε ‘he said’, have been added to his excerpts by S so were not used by A. It is however obvious that in S they have the same function as the forms of *verba legendi* shared by S and P. And some of these terms are in Aristotle: ἔφησε (not in Theophrastus; frequent in Arist. *Top.* and *SE*) at *GA* 4.4.769b31, ‘Democritus declared’ plus tenet; ἀπεφαίνετο (not in Theophrastus) Arist. *EN* 10.9.1179a10, ‘Solon declared’ plus summary of story in Herodotus (compare ‘Socrates said’ e.g. where the *Phaedo* is cited but not mentioned, Arist. *EE* 7.1.1235a37–39); εἶπε (term not in Theophrastus) Arist. e.g. *Pol.* 1.1.1252b11, ‘Hesiod said correctly in his verse’ plus quoted line (*Op.* 405).

<sup>442</sup> See Schrijvers (1997) at (1999) 49–50, Piazzì (2005) 52–55, both with references to the discussion in the secondary literature, and on Lucretius and doxography in general Runia (1997). The *homoiomereiai* attributed to Anaxagoras at P 1.3.4 ~ S 1.10.12 should be compared with those attributed to Epicurus at P 1.7.9 ~ S 1.1.29b, with the ὁμοιομερῆ attributed to Empedocles at P 1.13.1 ~ S 1.14.1k, and with the ὁμοιομερεῖας attributed to Empedocles at P 5.26.4, parallel in S no longer extant (cf. for ὁμοιομερῆ attributed to Anaxagoras A at S 1.15.6a (1.14.3 Diels), for anonymous authorities A at S 1.15.11 (1.16.1 Diels), and A at S 1.50.26 (4.9.9 Diels)). In other words, the enigmatic *homoiomereiai* attributed to Epicurus at P 1.7.9 ~ S 1.1.29b should first be looked at in their Aëtian

ras' doctrine (*Cael.* 3.3.302a31–b1), begot a substantive that stuck to Anaxagoras' name. In the same sentence in P we hear that Anaxagoras 'declared', ἀπεφάνητο, these simlipartials to be the principles of things; same formula at the beginning of the lemma, at P 1.3.4 ~ S 1.10.12.

At P 1.15.2 ~ S 1.16.1 we are told that the Pythagoreans 'called the surface of body colour' (χρoιὰν ἐκάλουν τὴν ἐπιφάνειαν τοῦ σώματος). This information too derives from Aristotle, but in a less complicated way;<sup>443</sup> it may be historically correct, but we can be certain that A did not find it while studying Pythagorean documents—or for that matter Aristotle's *De Sensu*. In the Aëtian chapter the Pythagorean tenet is opposed to, or at any rate much different from, those of Empedocles and Plato in the next two lemmata, but diaeretically related to the anonymous definition in the first lemma and that attributed to Zeno at P 1.15.4 ~ S 1.16.1 (further down).

Examples of Stoic terminology in a lemma with the name-label 'the Stoics' (A at P 1.*Praef.*2), or whole chapters exclusively dealing with doctrines of 'the Stoics' or 'Chrysippus' (4.11, 4.12, 4.21), are cited with '(they) call', καλοῦσιν, 'called' εἰρημένον, 'call' καλεῖν, and 'is called' καλεῖται: the logical part of philosophy they also 'call', καλοῦσιν, 'dialectical', A at P 1.*Praef.*2. This is in sharp contrast to the Peripatetics, whose division as reported in the next lemma lacks such a part. The Stoics also καλοῦσιν, 'call', the cognitive and volitional regent part 'reasoning power' (λογισμός, P 4.21). The voice qua part of the soul, εἰρημένον 'called' φωνᾷεν by Zeno, they also καλοῦσιν, 'call', φωνη(τικόν),<sup>444</sup> P 4.21 (4.21.4 Diels). According to 'Zeno the Stoic in his *On Nature*' it does not matter whether one 'calls', καλεῖν, fate 'providence' and 'nature', lemma of A 1.27 at S 1.5.15 (main content confirmed by T 6.14)—a lemma important also for its explicit reference to a book, given directly for a doxa. There are also cases of etymologizing names. An apparition befalling a rational soul 'is called a concept', *ennoēma* (ἐννόημα καλεῖται), 'taking its name from *noûs* (intellect)', P 4.11.1 (4.11.4 Diels ~ *SVF* 2.83). 'Presentation', *phantasia* (φαντασία) is (famously) said to be 'called' after φῶς, *phōs*, 'light', P 4.12.1 (4.12.2 Diels), an idea Aris-

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macrocontext and the individual microcontexts constituting this macrocontext, a job which cannot be undertaken here.

<sup>443</sup> Arist. *Sens.* 3.439a30–b1. Alex.Aphr. in *Sens.* 49.11 says 'he refers to the tenet of the Pythagoreans' (παράτιθεται τὴν τῶν Πυθαγορείων δόξαν).

<sup>444</sup> For this emendation (of Diels' text, which is accepted by von Arnim, Mau, and Lachenaud) see Mansfeld (2005b) 384–385 n. 87; cf. A at P 4.4.2 ~ T 5.20, G chs. 24 *fin.* (Mnesarchus) and 102, *SVF* 1.143, 2.828, 2.830, Panaetius fr. 125 Alesse.



totle already toyed with.<sup>445</sup> It would be unreasonable to complain about the quality of the handbook(s) excerpted.

We may recall some apocryphal examples of naming seen above, Section 7 *ad fin.*: culture hero Pythagoras as the first to call philosophy by this very name (προσαγορεύσας, P 1.3.7 ~ S 1.10.12),<sup>446</sup> and as the first to call the container of all things ‘cosmos’ (ὠνόμασε, 2.1.1\*).

Other examples of naming, with ‘(he) calls’, καλεῖ, or ‘(it) is called’, καλεῖσθαι: Pythagoras ‘calls’ the symmetries in the numbers ‘harmonies’, P 1.3.7 ~ S 1.10.12 *ad init.*; this does not go back to the ancient sage verbatim. Philolaus ‘calls’ the central fire of ‘the universe hearth and Zeus’ house and the gods’ mother, altar and maintenance and measure of nature’, 2.7.6\* (S only). The lemma as a whole is a combination of genuine and spurious material for Philolaus, so the citation depends on intermediary literature; the ‘hearth’ is also attested elsewhere, and ‘house of Zeus’ is about the same as other Pythagorean designations of Zeus’ abode.<sup>447</sup> In the spurious part we find the same terminology of calling: ‘he calls’ the highest part of the heavenly region ‘Olympus’, and what comes under it ‘Cosmos’. For the doxographer the distinction between authentic and spurious is irrelevant, while similarity of presentational terminology is not. We note that Philolaus’ complicated tenet is the penultimate to be listed, so is largely beyond the chief diaeresis of the chapter; this is because it is rather difficult to formulate a division which would cover all the ingredients of this lemma.

The terminology of naming is similar with regard to Parmenides, who ‘calls’ the fiery region in which the stars are ‘heaven’ (οὐρανός, 2.15.7\*), and who ‘calls’ the moon ‘falsely shining’ (ψευδοφανῇ<sup>448</sup> τὸν

<sup>445</sup> *SVF* 2.54, cf. S.E. *M.* 7.162 ~ *SVF* 2.63; for Stoic etymology, esp. in Chrysippus, see Tieleman (1996) 196–201; Arist. *An.* 3.3.428b30–429a4; for Aristotle’s etymologizing see Bonitz, *v.* Etymologica.

<sup>446</sup> For this verb see above, n. 154.

<sup>447</sup> See Burkert (1972) 243–246, Huffman (1993) 395–400 and (2007) 81–87. For ‘hearth’ (ἑστία) see Philolaus fr. B7 DK. ‘House of Zeus’ is close to ‘garrison of Zeus’ (Διὸς φυλακή) as at Arist. *Cael.* 2.13.293b3 and fr. 204 R<sup>3</sup> *ap. Simp. in Cael.* 512.9–14 ‘in his Pythagorean books’ cited by Simplicius *ad loc.* (ἐν τῷ περὶ τῶν Πυθαγορικῶν), and to ‘tower of Zeus’ (Ζανὸς πύργος) also ἐν τοῖς Πυθαγορικοῖς, same fragment. But note that Simp. 512.12–14 distinguishes two groups of Pythagoreans: ‘some’ (οἱ μὲν) call the central fire ‘tower of Zeus, as he [sc. Aristotle] reports himself in his Pythagorean writings’, ‘others (οἱ δέ) garrison of Zeus, as in the present passage [sc. of the *On the Heavens*]’.

<sup>448</sup> Meineke emended to ψευδοφαῖ in 2.30.5\* For 2.30.3\* the mss. of S have ψευδοφανῇ, while those of P are divided; see apparatus in Mau and Lachenaud, who prefer ψευδοφαῖ for the Anaxagoras lemma. A problem is that these words occur only here (and ψευδοφανοῦς once in the 10th cent. author Genesisius). Both as to terminology and

ἀστέρα καλεῖ 2.30.5\*, S only; P 2.30.2 has the more ambiguous λέγεσθαι), i.e. shining with borrowed light. See 2.26.2\*, Parmenides' moon is illuminated by the sun, so his view is part of the diaphonia as to whether or not the moon has its own light, for which see 2.28\*,<sup>449</sup> where this part of the lemma in ch. 2.30\* would have been more at home. We note that this epitheton is what abridgement has reduced the characterizations to in two Parmenidean lines about the moon that are extant verbatim: fr. B14 DK, 'alien light shining in the night', and fr. B15 DK, 'always looking at the rays of the sun'.

This relation to the diaphonia also holds for the tenet of Anaxagoras at 2.30.3\* (both P and S); *ad finem* we read, in virtually the same words as in the Parmenides lemma, that 'the heavenly body is said to be "falsely shining"' (ψευδοφανῇ λέγεσθαι τὸν ἀστέρα). At 2.28.6\* Pythagoras and Anaxagoras and others are listed as believing the moon to be illuminated by the sun. We need the information from these other chapters to be able to interpret the lemmata at 2.30.3\*, Anaxagoras, and 2.30.5\*, Parmenides, and may see this in terms of the macrostructural context of the cluster of chapters dealing with the moon.

The division of the heaven into circles is attributed to 'Thales, Pythagoras, and his followers'; the first circle 'is called' (καλεῖται) 'arctic and always visible', the second 'summer tropic', etc., 2.12.1\* (both P and S). This anachronism is a good example of the doxographical projection of standard science and terminology to the very beginnings of philosophy; compare at 2.24.1\* the attribution to Thales of the 'correct' explanation of the eclipse of the sun. According to 'Plato and the astronomers' at 2.16.6\* (this part only in S) 'it' (the heavenly body at issue) appears when rising as the 'dawn-bringer', and when setting 'is called' (καλεῖσθαι, P only) 'evening star'. What is behind this distorted formula is of course the astronomical discovery that what people call 'evening star' and 'dawn-bringer', believing them to be different, is one and the same heavenly body, viz. Venus (a discovery attributed to Parmenides by Favorinus and by others to Pythagoras, D.L. 9.23). The verb is also used in an explanatory phrase (which Diels need not have bracketed) in A at P 3.18.1, the mono-lemmatic

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contents the parallel in the Anaximander doxography at D.L. 2.1 cited by Mau is good: 'the moon shines with false light, and is illuminated by the sun', τὴν τε σελήνην ψευδοφανῇ, καὶ ἀπὸ ἡλίου φωτίζεται. In composita ψευδο- means 'false', and Parmenides fr. B14 DK calls the moon νυκτιφαής.

<sup>449</sup> See Lachenaud (1993) 121 n. 2, 122 n. 1.

chapter on the halo: ‘this visible circle is called, καλεῖται, halo, because it resembles a halo, threshing floor’, thus pertaining to a name as well. The gloss does not attribute the origin of the name to an inventor, or gives an etymological reason, but points to a resemblance with something familiar. The emphasis on names and name giving in these astronomical lemmata places them in a larger and shared context.

Behind such examples of the explanation of names, or words, we sense theories concerned with the origin of language: the attribution of conventional names to name givers, and a phenomenal or a more interior resemblance supporting a natural origin.

In the chapter ‘On place’, 1.19, we have three contrasting views. At P 1.19.1 ~ S 1.18.4c Plato is said to have viewed *topos*, ‘place’, as ‘what participates (μεταληπτικόν) in the Forms, the designation he metaphorically called the matter by, εἶρηκε, as a sort of nurse and recipient’ (καθάπερ τινὰ τιθήνην καὶ δεξαμενὴν). In the *Timaeus* Plato speaks of *chôra*, χώρα, e.g. 52a–d. It is Aristotle who declares that ‘Plato in the *Timaeus* says (! φησιν) that matter and *chôra* are the same, for what participates (μεταληπτικόν) and the *chôra* are one and the same—[...] he declared space (*topos*) and *chôra* to be the same’, *Phys.* 4.2.209b11–16.<sup>450</sup> The term μεταληπτικόν also derives from Aristotle’s interpretation of the dialogue. We note that in the *Timaeus* the term δεξαμενὴ is in 53a, while the word ὑποδοχή, which is more or less synonymous, is linked with τιθήνη in 49a (τιθήνη also 52d, 88d). Also cf. *Ti.* 50d τὸ ... δεχόμενον. In the report, which ended up in the *Placita* lemma, a central doctrine of the dialogue has been interpreted systematically, with some assistance from Aristotle’s interpretation. This kind of systematization is even more clear in the chapter ‘On matter’, P 1.9.4 ~ S 1.11.3, where P has ‘Plato and Aristotle’ and S has ‘Plato’ (a quotation of *Ti.* 50b–d is tacked on in S, and the Aëtian name-label Aristotle is replaced by an Aristotelian passage on matter AD fr. 2 Diels at S 1.11.4, with Stobaeian name-label Aristotle). Here a whole string of rare key terms relating to the *Timaeus* is found (we do not cite all of them), and matter is characterized as becoming ‘recipient of the Forms [not Aristotle’s μεταληπτικόν but Plato’s δεξαμενὴν], and a sort of nurse and mother’. The term ‘mother’ goes back to Plato; see the single instance at *Ti.* 50d.

<sup>450</sup> Aristotelian hyperinterpretation of *Ti.* 52b4.

This string of key terms from or relating to Plato's dialogue exactly resembles that of choice formulas and words from or relating to Philolaus' treatise at 2.7.6\*. In Plato's case a full check is possible; in Philolaus' it is not. Both times we may take sharp note of the fact that quite a bit of interpretative intervention must have happened before the doctrines landed in A's collection.

Another quotation we cannot check is A at P 5.14.1 ~ Alcmeon fr. B<sub>3</sub> DK, in the chapter 'Why are mules sterile', with three lemmata sorted by means of a mild diaeresis. The reason Alcmeon is claimed to have given for the sterility of female mules is that 'their uterus fail to "yawn" [...]; for thus he said himself' (παρὰ τὸ μὴ 'ἀναχάσκειν' τὰς μήτρας [...]; οὕτω γὰρ αὐτὸς εἶρηκεν). The verb ἀναχάσκειν, a 'vox Alcmaeonis' according to Diels, is explained as ἀναστομοῦσθαι, 'to open at the mouth'. It seems to have been preserved because it is so wonderfully bizarre and breaks the monotony of all those chapters dealing with semen and its discontents. The two other lemmata of this chapter are also of interest. P 5.14.2 has the name-label Empedocles. P 5.14.3 mentions Diocles (fr. 24b van der Eijk), who 'is his witness, saying: "In the dissections we have often observed that the uterus of mules is of this kind", and (adding) that because of such reasons women, too, can be sterile'.<sup>451</sup> The *oratio recta*, esp. the exceptional and vivid presence of speech instead of narrative and the accompanying participle λέγων are impressive, but we should nevertheless recall that prose quotations may be subtly (or even not very subtly) modified. One may well believe that Diocles 'said' a bit more, i.e. was explicit about the kind of deformations he encountered. In the lemmatic context of the doxographer it is sufficient, after the two previous lemmata, to refer to such matters with the undescriptive expression 'of this kind'. It is not entirely clear to us either whose view Diocles is meant to support, because that of Alcmeon is compatible with that ascribed to Empedocles, but in the context this, too, is not so important.<sup>452</sup> Perhaps it is simplest to think of Empedocles. It is anyhow out of the question that on the basis of this passage alone one would be allowed to believe

<sup>451</sup> Διοκλῆς δὲ μαρτυρεῖ αὐτῷ λέγων· "ἐν ταῖς ἀνατομαῖς πολλάκις ἐωράκαμεν τοιαύτην μήτραν τῶν ἡμιόνων." καὶ ἐνδέχεσθαι διὰ τὰς τοιαύτας αἰτίας καὶ τὰς γυναικας εἶναι στείρας. Tr. van der Eijk, slightly modified.

<sup>452</sup> This quotation is discussed by Runia (1999) 222, 225–226, and van der Eijk (2000–2001) 2:44.

that Diocles cited Empedocles. In a doxographical context an earlier figure can appeal to, that is to say prochronistically ‘quote’, or argue against, a later one.

Diocles is also present in the penultimate chapter (better preserved in Arabic than in Greek)<sup>453</sup> of the treatise, A at P 5.29.2 (fr. 56b van der Eijk), with ‘Diocles says (φησιν): appearances (are) a sight of the unseen’. A statement in *oratio recta* on prodromes of fever follows: ‘the appearances as a follow-up of which the fever is seen are wounds, inflammations, and swollen glands’. One agrees with the editor of his fragments that Diocles may well have used this tag, elsewhere attributed to Anaxagoras and Democritus, although one cannot be sure.<sup>454</sup> It is moreover a moot question whether A or his source knew it as more than an anonymous proverb.<sup>455</sup> Again, we cannot check the correctness of the attribution. In the context of the chapter Diocles’ tenet comes to be in explicit diaphonic opposition to that of Herophilus in the next lemma, as we now also know thanks to Q: ‘Herophilus refutes this view’, etc.<sup>456</sup> We do not know that Herophilus really attacked Diocles. In a doxographical context it is sufficient that they can (be made to) disagree. Q here has also preserved Herophilus’ conviction that a fever ‘frequently comes up *without* in its case a cause being *apparent*’<sup>457</sup>—the very contrary of Diocles’ appeal to appearances. In the purported Diocles quotation the words ‘appearances’ (φαινομένοις) and ‘is seen as follow-up’ (ὁρᾶται ... ἐπιγενόμενος) may well have suggested to someone that it would be nice to add the proverb. So after all the tag may have been attributed to Diocles for the sake of doxographical controversy, and the two medical lemmata may have entered the doxographical mainstream together.

Further quotations. A famous one, A at P 1.3.4 ~ S 1.10.12 on Anaxagoras (only in P’s version of the lemma): ‘he begins as follows:

<sup>453</sup> See Runia (1999b) 245–248 (where accidentally the Greek in P for the first part of 5.29.3 has dropped out).

<sup>454</sup> Van der Eijk (2000–2001) 2:123, 124. Attribution to both Democritus and Anaxagoras S.E. *M.* 7.140.

<sup>455</sup> Macarius Cent. 6.84 (with the explanation ‘said of those who guess what will be from what has been’), App. Prov. Cent. 4.50 Leutsch-Schneidewin printed Anaxagoras fr. B21b DK; also cited anonymously Athenagoras *Leg.* 5.2, Eusebius *Theoph.* fr.6.80. Variations *A.70.* 9.2, ὅψις ἀδήλων τὰ φθεγγόμενα, ‘what is said’, Chrys. *Hom.* 1–34 in *Heb.*, PG 63.151.4–5, ἡ πίστις (‘faith’) τοίνυν ἐστὶν ὅψις τῶν ἀδήλων.

<sup>456</sup> Herophilus T 217b von Staden, cf. also above, text to n. 6. Van der Eijk (2000–2001) 2:124 argues that Q’s version of the Herophilus lemma is confused.

<sup>457</sup> ‘Häufig tritt es ein, ohne dass in ihm eine Ursache *sichtbar* ist’ (our emphasis).

“together all things were, and intellect separated them and brought them into cosmic order”, calling the things *chrēmata*’ (ἀρχεται δ’ οὕτως “ὁμοῦ πάντα χρήματα ἦν, νοῦς δ’ αὐτὰ διήρε καὶ διεκόσμησε”, χρήματα λέγων τὰ πράγματα).<sup>458</sup> We note the gloss about the vocabulary.

This reference is close to the very similar quotations of Sextus Empiricus and Diogenes Laërtius. Sextus, *M.* 9.6, writes ‘Anaxagoras says: “were together all things, and intellect came and brought them into cosmic order”’ (ὁ δὲ Ἀναξαγόρας φησὶν “ἦν πάντα ὁμοῦ χρήματα, νοῦς δὲ ἐλθὼν αὐτὰ διεκόσμησεν”). Diogenes’ quotation is virtually the same as Sextus’, 2.6: ‘beginning his treatise, which is written in pleasing and dignified language, as follows: “all things were together; then came intellect and brought them into cosmic order”’ (ἀρξάμενος οὕτω τοῦ συγγράμματος, ὃ ἐστὶν ἡδέως καὶ μεγαλοφρόνως ἡρμηνευμένον “πάντα χρήματα ἦν ὁμοῦ· εἶτα νοῦς ἐλθὼν αὐτὰ διεκόσμησε”). A variety of this quotation is in A at P 1.7.1 (1.7.5 Diels), ‘Anaxagoras says that “in the beginning the bodies were resting, (but) the intellect of God brought them into cosmic order and effected the births of all things as a whole” (ὁ δ’ Ἀναξαγόρας φησὶν ὡς “εἰστήκει κατ’ ἀρχὰς τὰ σώματα, νοῦς <δὲ> αὐτὰ διεκόσμησε θεοῦ καὶ τὰς γενέσεις τῶν ὄλων ἐποίησεν”). Here the phraseology of the Anaxagoras quotation has been *modified* to produce a neat diaphonia with the citation of Plato that follows immediately (*DG* 299.22–300.2): ‘Plato did not posit that the first bodies are resting, but (posited that they are) moving in a disorderly way’; “this is precisely why the God, says he, knowing that order is better than disorder, brought them into cosmic order”’ (ὁ δὲ Πλάτων οὐχ ἐστηκότα ὑπέθετο τὰ πρῶτα σώματα, ἀτάκτως δὲ κινούμενα· διὸ καὶ ὁ θεός, φησὶν, ἐπιστήσας ὡς τάξις ἀταξίας ἐστὶ βελτίων, διεκόσμησε ταῦτα). This amounts to a ‘mis’-quotation of Plato *Ti.* 30a, where (in Cornford’s translation) ‘the God took over all that is visible—not at rest, but in discordant and unordered motion (οὐχ ἡσυχίαν ἄγον ἀλλὰ κινούμενον ... ἀτάκτως)—and brought it from disorder into order (εἰς τάξιν ... ἐκ τῆς ἀταξίας), since he judged that order was in every way the better (ἄμεινον)’.

Because the beginning of Anaxagoras’ treatise, fr. B1 DK, as quoted by Simp. in *Phys.* 608.21–23 is still extant (ἀρχόμενος τοῦ συγγράμματος, Simplicius also says), we do know that originally the order of the first four words was different, and that what follows in A or Diogenes

<sup>458</sup> The verb διακοσμεῖν is not Anaxagorean (it is also paralleled in Phld. *Piet.* c. 4a ~ Anaxagoras fr. A48 DK). Q misunderstands, and translates ‘Er ist das Prinzip [~ ἀρχεται] für alle Dinge und er ist es, welcher sie schmückt [~ διεκόσμησε]’.

Laërtius or Sextus Empiricus is a summary of Anaxagoras' doctrine.<sup>459</sup> But our point is not so much that what we have here are misquotations, but rather that varieties of this quasi-authentic but certainly not false or misleading version became part of the tradition shared by A. P seems to have epitomized away the words τοῦ συγγράμματος *vel sim.* Plato and Aristotle already 'mis'-quoted the first three words (they are not quoted in the extant remains of Theophrastus' *Physikai Doxai*).<sup>460</sup> That Anaxagoras spoke both of things, or matter, and the divinity is of course part of the tradition from Aristotle,<sup>461</sup> and the epitomizing citation is a graphic way of illustrating this point.

The word φησί(ν), 'he says' or 'says he', need not but may be used to indicate a reference, or a quotation. The suggestion that what we read is a quotation is particularly strong when the word φησί(ν) is found in between the words that are, or seem to be, quoted, as we saw in the reference to *Ti.* 30a cited above. In A at P 1.3.7 ~ S 1.10.12, lemma Pythagoras, we read (more or less the same text in P and S) as part of an exposition in *oratio recta*: 'and again, the force of the decad, says he, is in the fours and the tetrad' (καὶ τῶν δέκα πάλιν, φησὶν, ἡ δύναμις ἐστὶν ἐν τοῖς τέσσαρσι καὶ τῇ τετραδί). Later on in this lemma we find (P only, after the quoted lines of the Pythagorean oath): 'and our soul, says he, consists of the tetrad' (καὶ ἡ ἡμετέρα ψυχὴ, φησὶν, ἐκ τετραδὸς σύγκειται). The Neopythagorean source or sources used by A or an intermediate source attributed these thoughts to the master himself. This may be correct in principle, though the way it is expressed of course is not, since Pythagoras as a rule is not presented as a philosopher who wrote. But there can be no doubt that what is quoted is a written source.

The most discussed quotation, or pseudo-quotation, in A is probably the so-called fragment of Anaximenes in A at P 1.3.3 ~ S 1.10.12 (~ fr. B2 DK), where φησὶν is found between the cited words: "just as our soul, says he, being air, holds us strongly together, so breath and air hold together the whole cosmos"; air and breath are said synonymously' ("οἷον ἡ ψυχὴ, φησὶν, ἡ ἡμετέρα ἀήρ οὔσα συγκρατεῖ ἡμᾶς, καὶ ὅλον τὸν κόσμον πνεῦμα καὶ ἀήρ περιέχει"· λέγεται δὲ συνωνύμως ἀήρ καὶ πνεῦμα'). Our overview of quotations and misquotations up till now

<sup>459</sup> Summarized further D.L. 2.6.

<sup>460</sup> Plato *Grg.* 465d, *Phd.* 72c, Arist. *Phys.* 3.4.203a25, *Met.* Γ 4.1007b26. For the first words of the fragment see Rösler (1971).

<sup>461</sup> *Met.* A 3.984a11–15, 984b15–20, etc.; Simp. in *Phys.* 27.2–5 ~ Thphr. fr.228A FHS&G, *Phys.Op.* fr. 4 Diels, Hipp. *Ref.* 1.8.1, P 1.3.4 ~ S 1.10.12.

has shown that as a rule such phrases go back to something genuine, but, again as a rule, they are not verbatim (poetry excepted, where quotations are fixed and differences restricted to *variae lectiones*). Most of the wording, including the word ‘cosmos’, can with certainty be said to be foreign to Anaximenes, but the thought may well be genuine, viz. a parallel between the role of air in the cosmos and of air in the body. The presence of an exegetical note after a quotation or reference is far from unusual in A,<sup>462</sup> and supports the impression that this indeed is a rephrased quotation. As this is not the place for further discussion of this vexed issue, we must limit ourselves to the suggestion that the ‘fragment’ can only be studied in a satisfactory way in the context of A’s various modes of quotation, and as long as one realizes that A’s information in general has been reshaped in the course of centuries of tradition and interpretation.

A similar quotation with φησί again in the middle, of Epicurus this time, is at A at P 1.3.9 (section of the lemma not preserved in S 1.10.14), ‘for it is necessary, says he, that the bodies move through the blow (i.e. impact) of weight; for (otherwise) they would not move’ (“ἀνάγκη γάρ, φησί, κινεῖσθαι τὰ σώματα τῇ τοῦ βάρους πληγῇ· ἐπεὶ οὐ κινήθησεται”, fr. 275 2nd text Us.). The thought that weight is one of the factors that make the atoms move is Epicurean, and both the words σώματα and πληγή can be paralleled from Epicurus’ extant remains, the former several times, the latter at *Letter to Herodotus ap. D.L. 10.53* (and often in Lucretius. Also see the *Glossarium Epicureum*, v.). But ‘impact of weight’ is a strange expression, even if understood as short for the impact of bodies having weight. The quotation looks like the summary of a larger argument (we do not to claim, however, that Epicurus would be incapable of summarizing a larger argument). And in the Aëtian lemma Epicurus is contrasted with Democritus, who ‘said’ (ἔλεγε) that bodies have ‘two’ properties, size and shape, while Epicurus ‘added’ (ἐπέθηκεν) a ‘third’, viz. weight. This is a diaeretic listing of properties according to number, that is to say according to the category of quantity. Elsewhere in A, in the chapter ‘On necessity’, the ‘impact’ (πληγή) as a cause of motion of the atoms is ascribed to Democritus, P 1.26.2<sup>463</sup> (no paral-

<sup>462</sup> An example above, text to n. 458. See further e.g. A at P 1.3.9 ~ S 1.10.14 ‘it is called, εἴρηται, atom not because it is smallest, but because it cannot be cut’; P 3.18.1, ‘this visible circle is called, καλεῖται, halo, because it resembles a halo, threshing floor’.

<sup>463</sup> Also Cic. *Fat.* 46. See the texts collected at Dem. fr. A47, A66 DK; in a perhaps somewhat different sense fr. B32 DK.



lel in S): ‘Democritus (says) it is the resistance and motion and impact of matter’—not the impact of weight. ‘Matter’ here of course represents the atoms. Though one cannot be sure since further checks are impossible, the suspicion remains that a doxographical ploy is involved. The listing of the properties of atoms at P 1.3.9 is combined with Epicurus’ counterfactual explanation of their movement, while Democritus’ explanation of this movement is lacking here. Epicurus is made to argue against Democritus: ‘no, not a blow of atoms against other atoms, but the blow of the weight of the atoms themselves’. The assumption of weight as the cause of motion renders the quest for a first origin of motion superfluous, while Democritus’ assumption is vulnerable to *regressus ad infinitum*. Hence the counterfactual. We admit that perhaps the argument is too good to have been constructed by the doxographer or a purported doxographical source and that, accordingly, it derives from something Epicurus argued (possibly in his *Against Democritus*, fr. [11] Arrighetti), but posit that in its present form it is a paraphrastic abstract, which has been tailored to suit a doxographical opposition.

There are also cases where φησί(v) introduces a true verbatim quotation. Poetic lines, we know, were most of the time not modified when quoted. In the same chapter, A at P 1.3.10 (no parallel in S), the quotation of Empedocles fr. B6 DK is introduced by the words φησί δ’ οὕτως, ‘he says as follows’. These lines are often quoted, and can be found in a multiplicity of sources.<sup>464</sup> It is therefore certain that A did not derive the lines directly from the poem. Another Empedocles quotation is introduced in virtually the same way in T 4.14, who has οὕτω φησίν, but not in P 1.18.2 ~ S 1.18.1a, where we find the name-label plus fr. B13 DK. This quotation is only paralleled in [Arist.] *MXG* 2.976b26. It has floated down in the stream of tradition in the same way.

The quotation of Plato *Th.* 155d in A at P 3.5.2 ~ S 1.30.1 (no reference to the dialogue) is also quite good: ‘Plato says “people genealogized her [i.e. Iris, the rainbow] from Thaumás because of their admiration for her”’ (Πλάτων φησί ‘Θαύμαντος αὐτήν γενεαλογῆσαι τοὺς ἀνθρώπους διὰ τὸ θαυμάσαι ταύτην’). Checking the Plato passage we find the words θαυμάζειν and γενεαλογεῖν, and the expression ὁ τὴν Ἥρην Θαύμαντος ἐκγονον φήσας.<sup>465</sup>

<sup>464</sup> Listed Diels *PPF ad* Empedocles fr. B6.

<sup>465</sup> ‘who says she is the child of Thaumás’—a reference to Hesiod *Th.* 265, so a reference within a reference of which the source followed by A may not have been aware.

This brings us to another type of reference, viz. the quoting of an intermediary authority for the contents of a tenet, belonging to group (a). At S 1.18.1c works by Aristotle dealing with the Pythagoreans are quoted; P 1.18.5 has epitomized away these references. A (in S) refers both to the *Physics* and the *On the Philosophy of Pythagoras*: ‘Aristotle writes in Book IV of the *Physical Lecture Course*’, followed by a quotation in *oratio recta* (Ἀριστοτέλης ἐν τετάρτῳ Φυσικῆς Ἀκροάσεως γράφει), ‘and in Book I of the *On the Philosophy of Pythagoras* he writes’, followed by a quotation in *oratio obliqua* (ἐν δὲ τῷ Περί τῆς Πυθαγόρου Φιλοσοφίας πρώτῳ γράφει).<sup>466</sup> From DG 317b4 on Diels includes as part of the Aëtian lemma an account beginning with ‘and elsewhere [i.e. in another work, or book of a work] he says’ (ἐν ἄλλοις λέγει). This part presumably derives from AD<sup>467</sup> and need not concern us here. The correct title of the lost treatise is presumably ‘*On*’ or ‘*Against the Pythagoreans*’;<sup>468</sup> A cites a Neopythagoreanizing and so more personalized version. But the reference to the *Physics* is interesting, because it is the first occurrence ever of the title Φυσικὴ Ἀκροάσις, which is also found in the catalogues of Ptolemy-el-Garib and of the so-called *Appendix Hesychiana*, and in the manuscript tradition,<sup>469</sup> but not in the catalogue of Diogenes Laërtius, while Aristotle himself uses Φυσικά, or Περί Φύσεως.<sup>470</sup> It is therefore hard to avoid the conclusion (already argued on similar grounds by Diels) that this was a comparatively recent addition to the treasury of quotations. One cannot, however, be as certain as Diels that this reference, like other references to Aristotle and quite a few Aristotelian lemmata, were added by A in person.<sup>471</sup> In its condition as an adornment of the exposition of physical doctrine it does not differ from other quotations with a longer history of incorporation.

We argue that this may also be true of A’s two references to Theophrastus as an intermediary source. First that at 2.29.8\* (S only), ‘Anaxagoras, as Theophrastus says, ὥς φησί, (affirms that an eclipse of the moon takes place) *also* when it happens that bodies below the moon

<sup>466</sup> *Phys.* 4.6.213b23–24, and fr. 201 R<sup>3</sup>.

<sup>467</sup> See Vol. 1:251–252, and already Diels *DG ad loc.* and 75 n. 2.

<sup>468</sup> Catalogue at D.L. 5.25, nos. 97 and 101; see Moraux (1951) 107, Goulet (1989) 427.

<sup>469</sup> Ptol. no. 39 Hein (1985) 427, no. 40 Goulet (1989) 433; *App.Hes.* no. 148, Goulet (1989) 430.

<sup>470</sup> On the versions of the title see also Pellegrin (2003) 265–266.

<sup>471</sup> *DG* 215–216: the Aristotelian references do not derive from the *Vetusta Placita* but were added by A.

cause occultation'.<sup>472</sup> This lemmatic note is appended to 2.29.7\*, where 'Thales, Anaxagoras, Plato, Aristotle, the Stoics, and the astronomers together agree' that the moon's eclipses are caused by the moon's descending into the shadow of the earth, etc. Theophrastus is cited as providing supplementary information, the same way the anonymous authorities are cited e.g. in the lemmata of A 4.13 at S 1.52.12. In a manner of speaking this piece of information may be seen as a footnote to the information deriving from the main doxographical tradition as transmitted at 2.29.7\*.<sup>473</sup>

P 2.20.2 gives two alternative doxai concerned with Xenophanes' view of the substance of the sun, separated by the word ἢ, 'or': 'Xenophanes (believes that) it consists of firelets that are gathered together out of the moist exhalation and so gather together the sun, *or* (that it is) an inflamed cloud' (Ξενοφάνης ἐκ πυριδίων τῶν συναθροισζομένων μὲν ἐκ τῆς ὑγρᾶς ἀναθυμιάσεως συναθροισζόντων δὲ τὸν ἥλιον ἢ νέφος πεπυρωμένον).

S 1.25.1a + 1b also has both doxai. At 1a, the very first item of a complicated chapter dealing with the issues concerning the sun, he begins with P's second alternative: 'Xenophanes says the sun is from inflamed clouds' (Ξενοφάνης ἐκ νεφῶν πεπυρωμένων εἶναι τὸν ἥλιον). The words εἶναι τὸν ἥλιον, 'the sun is', have been added by S from A's chapter heading, because otherwise the sentence in its new context immediately after the comprehensive heading of the chapter of the *Anthology* would be difficult to understand. S coalesces the sentence about the inflamed clouds with 2.24.5\* on the eclipse of the sun, also attributed to Xenophanes, whose name-label he omits (having mentioned it at the beginning of his coalesced lemma 1.25.1a). P's first alternative too is found in S: 1.25.1b, 'Theophrastus has written in his *Physics* (that it consists) of firelets that are gathered together out of the moist exhalation and so gather together the sun' (Θεόφραστος ἐν τοῖς Φυσικοῖς γέγραπεν ἐκ πυριδίων μὲν τῶν συναθροισζομένων ἐκ τῆς ὑγρᾶς ἀναθυμιάσεως, συναθροισζόντων δὲ τὸν ἥλιον). The underlined part is identical with that in P. The difference is that here Theophrastus is quoted as the 'reporter of the doxa'.<sup>474</sup> We note that the order of these two doxai in S is the reverse of that in P.

<sup>472</sup> Doxa cited Arist. *Cael.* 2.13.293b21–26 without name-label. Simplicius *ad loc.* says Alexander believed Pythagoreans were meant, in *Cael.* 515.24–26.

<sup>473</sup> Thus already Diels *DG* 217, 'doctum supplementum'.

<sup>474</sup> Runia (1992) 124.

A comparison with the other instances in A where an alternative view is added<sup>475</sup> suggests that perhaps we should not place these two doxai too far from each other, e.g. in two consecutive lemmata,<sup>476</sup> although in S they are separated by a lemma from another Aëtian chapter. Arguing from the parallels concerned with alternative views one might believe that the sequence in S, not P, is the correct one. That the sun is a (fiery) cloud belongs with the mainstream view of Xenophanes' nephology, as is clear from the other evidence, which not only includes several doxographical references in A but also two verbatim fragments, viz. Xenophanes fr. B 30 DK (of which the first half-line is even quoted in A at S 1.31.4 (3.4.4 Diels)) and fr. B28 DK.<sup>477</sup>

But the two alternative doxai are also in ps.Plutarch *Stromateis* 4 ~ Xenophanes fr. A32 DK: first the 'sun gathered from small and numerous firelets', then 'the sun and the other stars from clouds', in the same order as in P, though we should note that the doxai do not follow upon each other immediately but are separated by several paragraphs containing different information. Hippolytus *Refutatio* 1.14.3 too tells us about a 'sun from small gathering firelets', but he does not mention clouds in his Xenophanes chapter.<sup>478</sup>

A formal parallel for the alternatives concerned with Xenophanes' sun as found in P is the lemma on Empedocles' sun in the same chapter, 2.20.13\* (in both P and S), discussed above, Section 1.<sup>479</sup> Here too a longer doxa is followed by a shorter and rather different alternative.

The possibilities, one imagines, are as follows. The main doxa on Xenophanes' sun may have been cited from Theophrastus' *Physics*, just as the reference (this time without book title) to Theophrastus as source for a doxa of Anaxagoras at 2.29.8\*; or it may have been cited as a direct reference for the doxa. Anyway someone checked what was in Theophrastus' *Physics*. But the main tradition about Xenophanes' heavenly bodies, even including certain meteorological phenomena, affirms unanimously that these are inflamed clouds, so it is worth a doxographer's while to add, or to go on adding, this more general notion to the particular report of Theophrastus. In P the general idea is

<sup>475</sup> See above, Section 16, text to nn. 398–403, on A 4.13 at P 4.13.4 ~ S 1.52.5–6, and at P 4.13.3 ~ S 1.52.12–13.

<sup>476</sup> Runia (1992) 130–138 placed S 1.15.1a in the first and 1.15.1b in the fifth lemma of the reconstruction of A 2.20\*.

<sup>477</sup> Cf. A 2.13.13\*, 2.18.1\*, P 3.2.11 ~ S 1.28.1a.

<sup>478</sup> For these parallel doxographical accounts see Runia (1992) 125.

<sup>479</sup> Text to n. 25.

tacked on as a brief alternative. In the *Stromateis* of the other ps.Plutarch it is added as an afterthought, and concerns not only the sun but also the other heavenly bodies. S is doing his usual job of coalescing short doxai, so he first picks the brief sentence at the end of the lemma in A, adds a Xenophanean lemma from another chapter in A (dropping the name-label), and then cites the interesting longer half of the lemma in A, including the reference to Theophrastus' *Physics*, also without name-label, because after all this label was already at the beginning of his new unit of Xenophanean doxai. The reversed order of the two doxai in S as opposed to in P can be paralleled in S, for there are also other instances of such reversals of a sequence.<sup>480</sup>

Accordingly a hypothetical lemma in A, containing both these alternative (or, if you wish, supplementary) doxai on Xenophanes' sun, viz. first the account according to Theophrastus and then the shorter alternative without reference, can as to its structure be made to look very much like the single lemma on Empedocles' sun extant at 2.20.13\* (both P and S). Keeping the two Xenophanean doxai together (or not too far from each other) further down in the chapter has the further advantage of allowing ch. 2.20\* to begin with the tenet of the archegete of the Ionian Succession, Anaximander, as its first lemma.

Our present reconstruction of 2.20\* therefore has Anaximander in the first position. One cannot, however, be absolutely certain, as there are sufficient instances elsewhere in the *Placita* of different doxai, concerned with the same subject and attributed to the same name-label, found at some distance from each other in one and the same chapter.<sup>481</sup>

The lemma about the Xenophanean firelets according to Theophrastus was of great importance to Diels, because it was one of the foundation stones on which his reconstructed doxographical tradition beginning with Theophrastus came to rest.<sup>482</sup> What is in hindsight quite surprising is that he not only and of course correctly saw the contents

<sup>480</sup> At Runia (1992), esp. 133–140, the Xenophanes lemma presenting the ignited cloud comes first. For lemmata in reversed order in S cf. above, nn. 33, 140. Even more remarkable but fully comprehensible in view of S's priorities is the fact that A 1.7 has been incorporated in S 1.1 and A 1.3 comes much later, at S 1.10: theology before principles. Also noteworthy is that at S 1.10 we first have abstracts from A 1.3 at 1.10.12 + 14 + 16a, and then from A 1.2 at 1.10.16b; the preliminary account of the difference between elements and principles has become an appendix.

<sup>481</sup> See Part II, Spec.Rec. ch. 20, § 6.(8), where such double occurrences are listed and discussed: esp 2.13\* (Diogenes, 2.13.4\* and 2.13.10\*), 2.24\* (Xenophanes, 2.24.5\* and 2.24.8\*), and 2.31\* (Empedocles, 2.31.1\* and 2.31.4\*).

<sup>482</sup> *DG* 138, 140, 217–218.

of the larger part of P 2.20.2 as a Theophrastean note on Xenophanes, but also wanted to derive the mainstream tradition from the Eresian, although this is rather different. With regard to 2.29.7–8\* one cannot exclude that Theophrastus mentioned both explanations, but at P 2.20.2 this is not so. And even if one were to argue that the alternatives at P 2.20.2 may well have been formulated by Theophrastus too, the few explicit references to him as a source in A fail to prove that key parts, or aspects, of the *Placita* in general go back to him. One should compare the references to others in the *Placita*, which likewise fail to establish what are the primary sources of the whole treatise.

The relation between the *Placita* and the Early Peripatos has to be investigated in another way. The argument of our present inquiry is, among other things, an attempt to make visible the crucial contribution of the investigative and dialectical methodologies of Aristotle and, to some extent, of Theophrastus and the Stoa, to the macrostructure and microstructures of the *Placita*.

## CONCORDANCE

In the following table we present a concordance of the three major witnesses of Aëtius' compendium in the editions of Mau, Wachsmuth and Raeder respectively, together with the reconstructions of Diels and our own reconstruction (Book II only). The table will assist the reader in locating all the textual remains of Aëtius in the three texts and two reconstructions.

The concordance takes as its point of departure the fullest versions: for Books I, III–V this is Diels, for Book II our reconstruction. The other witnesses are then related to the fullest version. As elsewhere in this monograph the asterisk indicates the reconstruction of our *Specimen reconstructionis*.

In order to make the concordance as precise as possible we have numbered the texts to the furthest point of discrimination. In many cases this means that the numbering is more detailed than in the actual editions, but the method can be easily followed when the text is compared to the reconstructions. Note that prefatory material in the texts has been labelled with a zero, so 1.0 means the Preface to Book I.

<i>P</i>	<i>S</i>	<i>T</i>	<i>Diels</i>	<i>Mansfeld-Rumia</i>
1.0.1			1.0.1–3	
1.1.1			1.1.1–2	
1.2.1	1.10.16b1		1.2.1	
1.2.1	1.10.16b2		1.2.2	
1.3.1	1.10.12a		1.3.1	
1.3.1	1.10.2		1.3.2	
1.3.2	1.10.12b		1.3.3	
1.3.3	1.10.12c		1.3.4	
1.3.4	1.10.12f		1.3.5	
1.3.5	1.10.12g		1.3.6	
1.3.6	1.10.12h		1.3.7	
1.3.7a	1.10.12k		1.3.8	
1.3.7b			1.3.9	
	1.10.12i		1.3.10	
1.3.8	1.10.14a		1.3.11	

<i>P</i>	<i>S</i>	<i>T</i>	<i>Diels</i>	<i>Mansfeld-Runia</i>
	1.10.12d	4.5	1.3.12	
		4.7	1.3.13	
		4.8	1.3.14	
	1.10.14e		1.3.15	
	1.10.14f	4.9a	1.3.16	
	1.10.14b	4.9b	1.3.17	
1.3.9	1.10.14g	4.9c	1.3.18	
	1.10.16a1	4.11a	1.3.19	
1.3.10			1.3.20	
1.3.11	1.10.16a2	4.11b	1.3.21	
1.3.12	1.10.16a3	4.11c	1.3.22	
	1.10.12c	4.12a	1.3.23	
	1.10.12g		1.3.24	
1.3.13	1.10.14d	4.12b	1.3.25	
	1.10.14c	4.12d	1.3.26	
	1.10.16a4		1.3.27	
1.4.1			1.4.1-4	
1.5.1	1.22.3a2		1.5.1	
1.5.2	1.22.3a1		1.5.2	
1.5.3			1.5.3	
1.5.4	1.22.3a3		1.5.4	
		4.12c	1.5.5	
1.6.1			1.6.1-16	
1.7.1			1.7.1-10	
1.7.2	1.1.29b1		1.7.11	
1.7.3	1.1.29b2		1.7.12	
	1.1.29b3		1.7.13	
	1.1.29b4		1.7.14	
	1.1.29b5		1.7.15	
1.7.4	1.1.29b6		1.7.16	
	1.1.29b7		1.7.17	
1.7.5	1.1.29b8		1.7.18	
	1.1.29b9		1.7.19	
	1.1.29b10		1.7.20	
	1.1.29b11		1.7.21	
	1.1.29b12		1.7.22	
	1.1.29b13		1.7.23	
	1.1.29b14		1.7.24	
	1.1.29b15		1.7.25	
	1.1.29b16		1.7.26	
	1.1.29b17		1.7.27	
	1.1.29b18		1.7.28	
	1.1.29b19		1.7.29	



<i>P</i>	<i>S</i>	<i>T</i>	<i>Diels</i>	<i>Mansfeld-Rumia</i>
	1.1.29b20		1.7.30	
1.7.6	1.1.29b21		1.7.31	
1.7.7	1.1.29b22		1.7.32	
1.7.8	1.1.29b23		1.7.33	
1.7.9	1.1.29b24		1.7.34	
1.8.1			1.8.1	
1.8.2			1.8.2	
1.8.3			1.8.3	
1.9.1	1.11.1		1.9.1	
1.9.2	1.11.3a	4.13a	1.9.2	
1.9.3	1.11.3b	4.13b	1.9.3	
1.9.4	1.11.3c	4.13c-d	1.9.4-5	
1.9.5	1.11.5b1		1.9.6	
	1.11.5b2	4.13c	1.9.7	
1.10.1	1.12.1a1		1.10.1	
	1.12.1a2		1.10.2	
1.10.2			1.10.3	
1.10.3			1.10.4	
1.10.4			1.10.5	
1.11.1	1.13.1a1		1.11.1	
1.11.2	1.13.1a1		1.11.2	
1.11.3	1.13.1b1		1.11.3	
	1.13.1b2		1.11.4	
1.11.4			1.11.5	
	1.13.1d1		1.11.6	
	1.13.1d2		1.11.7	
	1.13.1d3		1.11.8	
1.12.1	1.14.1a1		1.12.1	
1.12.2	1.14.1a2		1.12.2	
1.12.3	1.14.1a3		1.12.3a	
	1.14.1d		1.12.3b	
1.12.4	1.14.1f1		1.12.4	
1.12.5	1.14.1f2		1.12.5	
	1.14.1f3		1.12.6	
	1.14.1h		1.12.7	
1.13.1	1.14.1k1		1.13.1	
1.13.2	1.14.1k2		1.13.2	
	1.14.1k3		1.13.3	
	1.14.1k4		1.13.4	
1.14.1	1.15.3b		1.14.1	
1.14.2	1.15.6a1		1.14.2	
	1.15.6a3		1.14.3	
	1.15.6a2		1.14.4	
	1.15.6a4		1.14.5	

<i>P</i>	<i>S</i>	<i>T</i>	<i>Diels</i>	<i>Mansfeld-Runia</i>
	1.15.6a5		1.14.6	
1.15.1	1.16.1a		1.15.1	
1.15.2	1.16.1b		1.15.2	
1.15.3	1.16.1c		1.15.3	
1.15.4	1.16.1d		1.15.4	
	1.16.1e		1.15.5	
1.15.5	1.16.1f		1.15.6	
	1.16.1b		1.15.7	
	1.16.1g		1.15.8	
	1.16.1h		1.15.9	
	1.16.1i		1.15.10	
	1.16.1j		1.15.11	
1.16.1	1.14.1i		1.16.1	
1.16.2	1.14.1g		1.16.2	
1.16.3	1.14.1b		1.16.3	
	1.14.1f		1.16.4	
1.17.1	1.17.1a		1.17.1	
1.17.2	1.17.1b		1.17.2	
1.17.3	1.17.1c		1.17.3	
1.17.4	1.17.1d		1.17.4	
1.18.1	1.18.1a1		1.18.1	
1.18.2	1.18.1a2	4.14b	1.18.2	
1.18.3	1.18.1a3	4.14a	1.18.3	
	1.18.1b1	4.14d	1.18.4	
1.18.4	1.18.1d1	4.14c	1.18.5	
1.18.5	1.18.1c		1.18.6	
1.19.1	1.18.4c		1.19.1	
1.19.2			1.19.2	
	1.18.1b2		1.19.3	
1.20.1	1.18.1d2		1.20.1	
	1.18.4a		1.20.2	
1.21.1	1.8.4ob1		1.21.1	
1.21.2	1.8.45		1.21.2	
1.21.3	1.8.4ob2		1.21.3	
1.22.1	1.8.45		1.22.1	
	1.8.4ob5		1.22.2	
	1.8.4ob7		1.22.3	
	1.8.4ob8		1.22.4	
	1.8.4ob9		1.22.5	
	1.8.4ob10		1.22.6	
1.22.2	1.8.4ob3		1.22.7	
1.22.2	1.8.4ob4		1.22.8	
1.22.2	1.8.45		1.22.9	
1.23.1	1.19.1a		1.23.1	

<i>P</i>	<i>S</i>	<i>T</i>	<i>Diels</i>	<i>Mansfeld-Rumia</i>
1.23.2	1.19.1g		1.23.2	
1.23.3	1.19.1b		1.23.3	
1.23.4	1.19.1b		1.23.4	
	1.19.1c		1.23.5	
1.23.5	1.19.1e		1.23.6	
1.23.6	1.19.1d		1.23.7	
	1.19.1f		1.23.8	
1.24.1	1.20.1a		1.24.1	
1.24.2	1.20.1d		1.24.2	
1.24.3	1.19.1e		1.24.3	
1.25.1	1.4.7a		1.25.1	
1.25.2	1.4.7c1		1.25.2	
1.25.3	1.4.7c2		1.25.3	
	1.4.7c3		1.25.4	
	1.4.7c4ii		1.25.5	
1.26.1	1.4.7c4ii			
1.26.2	1.4.7c5		1.26.1	
1.26.3			1.26.2	
1.26.4	1.4.7c4i		1.26.3	
1.27.1	1.5.15b2		1.27.1	
	1.5.15a		1.27.2	
1.27.2			1.27.3	
1.27.3			1.27.4	
	1.5.15e		1.27.5	
	1.5.15f		1.27.6	
1.28.1	1.5.15b1		1.28.1	
1.28.2	1.5.15c		1.28.2	
1.28.3	1.5.15g		1.28.3	
1.28.4			1.28.4	
1.28.5	1.5.15d		1.28.5	
1.29.1	1.6.17a2		1.29.1	
1.29.2a	1.6.17a3		1.29.2	
1.29.2b	1.6.17a1		1.29.3	
	1.6.17c1		1.29.4	
	1.6.17c2		1.29.5	
1.29.3	1.7.9a1		1.29.6	
1.29.4	1.7.9a2		1.29.7	
1.30.1			1.30.1	
1.30.2			1.30.2	
2.0.1			2.0.1	2.0.1*
2.1.1	1.21.6c1		2.1.1	2.1.1*
2.1.2	1.22.3b1	4.15a	2.1.2	2.1.2*
2.1.3	1.22.3b2	4.15b	2.1.3	2.1.3*
	1.22.3c1-2		2.1.8	2.1.4*

<i>P</i>	<i>S</i>	<i>T</i>	<i>Diels</i>	<i>Mansfeld-Runia</i>
	1.22.3c3			2.1.5*
2.1.4	1.21.3a1		2.1.4	2.1.6*
2.1.5	1.21.3a2		2.1.5	2.1.7*
2.1.6	1.21.3a3		2.1.6	2.1.8*
2.1.7	1.21.3b1		2.1.7	2.1.9*
2.2.1	1.15.6b1	4.16a	2.2.1	2.2.1*
2.2.1		4.16b	2.2.1	2.2.2*
2.2.1			2.2.1	2.2.3*
	1.15.6b2		2.2.2	2.2.4*
2.2.2			2.2.3	2.2.5*
		4.16c		2.2a.1*
		4.16d		2.2a.2*
	1.21.3b2		2.4.14	2.2a.3*
2.3.1	1.21.3c1	4.16e	2.3.1	2.3.1*
2.3.2	1.21.3c2	4.16f	2.3.2	2.3.2*
	1.21.6a		2.3.3	2.3.3*
2.3.3	1.21.6b1		2.3.4	2.3.4*
2.4.1	1.21.6c1 & 6f1	4.16g	2.4.1 & 3	2.4.1*
				2.4.2*
	1.21.6f2		2.4.4	2.4.3*
	1.21.6f3		2.4.5	2.4.4*
2.4.3	1.20.1f2	4.16h	2.4.11	2.4.5*
	1.20.1f3		2.4.13	2.4.6*
	1.20.1f4	4.16i	2.4.6	2.4.7*
	1.20.1f5		2.4.7	2.4.8*
	1.20.1c		2.4.2	2.4.9*
2.4.4	1.20.1f1		2.4.12	2.4.10*
	1.20.1f6		2.4.8	2.4.11*
	1.20.1f7		2.4.9	2.4.12*
2.4.2	1.20.1f8		2.4.10	2.4.13*
2.5.1	1.21.6b2		2.5.1	2.5.1*
2.5.2			2.5.2	2.5.2*
2.5.3	1.21.6d1		2.5.3	2.5.3*
	1.21.1			2.5a.1*
	1.21.6e1		2.4.16	2.5a.2*
	1.21.6e2		2.4.17	2.5a.3*
	1.21.6d2		2.4.15	2.5a.4*
2.6.1	1.21.3b3		2.6.1	2.6.1*
2.6.2	1.21.6c3		2.6.2	2.6.2*
2.6.3			2.6.3	2.6.3*
2.6.4	1.22.1f1		2.6.4	2.6.4*
2.6.5	1.21.6c4		2.6.5	2.6.5*
2.6.6			2.6.6	2.6.6*
2.7.1	1.22.1a		2.7.1	2.7.1*

<i>P</i>	<i>S</i>	<i>T</i>	<i>Diels</i>	<i>Mansfeld-Rumia</i>
2.7.2	1.22.1e1		2.7.2	2.7.2*
2.7.3	1.22.1e2		2.7.3	2.7.3*
2.7.4			2.7.4	2.7.4*
2.7.5	1.22.1b		2.7.5	2.7.5*
	1.22.1d		2.7.7	2.7.6*
2.7.6	1.15.6d1		2.7.6	2.7.7*
2.8.1	1.15.6c		2.8.1	2.8.1*
2.8.2	1.15.6d2		2.8.2	2.8.2*
2.9.1	1.18.4b1		2.9.1	2.9.1*
2.9.2	1.18.4b2		2.9.2	2.9.2*
2.9.3	1.18.4b3		2.9.3	2.9.3*
2.9.4	1.18.4c1		2.9.4	2.9.4*
2.9.5	1.18.4c2		2.9.4	2.9.4*
2.10.1	1.15.6e		2.10.1	2.10.1*
2.10.2	1.15.6d3		2.10.2	2.10.2*
2.11.1	1.23.1a		2.11.1	2.11.1*
2.11.2	1.23.1b		2.11.2	2.11.2*
2.11.3	1.23.1c		2.11.5	2.11.3*
2.11.3	1.23.1d		2.11.4	2.11.4*
2.11.3	1.23.2a		2.11.3	2.11.5*
2.12.1	1.23.3a		2.12.1	2.12.1*
2.12.2	1.23.3b		2.12.2	2.12.2*
2.13.1	1.24.1a	4.17a	2.13.1	2.13.1*
2.13.2,5	1.24.1b1-2		2.13.2,11	2.13.2*
2.13.3	1.24.1c1	4.17b	2.13.3	2.13.3*
2.13.4	1.24.1d1	4.17d	2.13.4	2.13.4*
	1.24.1e1	4.17c	2.13.5	2.13.5*
	1.24.1f		2.13.6	2.13.6*
	1.24.1g1	4.17e	2.13.7	2.13.7*
	1.24.1h1		2.13.8	2.13.8*
	1.24.1k1		2.13.10	2.13.9*
	1.24.1d2	4.18f	2.13.9	2.13.10*
2.13.6	1.24.1l1	4.18g	2.13.12	2.13.11*
	1.24.1m1	4.18i	2.13.13	2.13.12*
2.13.7	1.24.1n1	4.19	2.13.14	2.13.13*
2.13.8	1.24.1o1	4.20a	2.13.15	2.13.14*
2.13.9	1.24.1o2		2.13.16	2.13.15*
2.14.1	1.24.2d	4.20b	2.14.1	2.14.1*
2.14.2	1.24.2d	4.20c	2.14.2	2.14.2*
2.14.3	1.24.1k2		2.14.3	2.14.3*
2.14.4			2.14.4	2.14.4*
			2.14.5	
2.15.1	1.24.2a1		2.15.1	2.15.1*
2.15.2	1.24.2a2		2.15.2	2.15.2*

<i>P</i>	<i>S</i>	<i>T</i>	<i>Diels</i>	<i>Mansfeld-Runia</i>
2.15.3	1.24.1e2		2.15.3	2.15.3*
2.15.4	1.24.1l3		2.15.4	2.15.4*
2.15.5	1.24.2b1		2.15.5	2.15.5*
2.15.6	1.24.1g2,1h		2.15.6	2.15.6*
	1.24.2e		2.15.7	2.15.7*
2.16.1	1.24.1c2		2.16.1	2.16.1*
2.16.2	1.24.2b3		2.16.2,3	2.16.2*
	1.24.2c1		2.16.4	2.16.3*
2.16.3	1.24.2c2		2.16.5	2.16.4*
2.16.4	1.24.1k4		2.16.6	2.16.5*
2.16.5	1.24.2b2		2.16.7	2.16.6*
	1.24.5			2.16.7*
				2.17.1*
2.17.1	1.24.3a		2.17.1	2.17.2*
	1.24.3b		2.17.2	2.17.3*
	1.24.3c		2.17.3	2.17.4*
2.17.2	1.24.1ii		2.17.4	2.17a.1*
2.17.3	1.24.1m2		2.17.5	2.17a.2*
2.17.4	1.24.1l2		2.17.6	2.17a.3*
2.18.1	1.24.1n2		2.18.1	2.18.1*
2.18.2			2.18.2	2.18.2*
2.19.1	1.24.1l4		2.19.1	2.19.1*
2.19.2	1.24.1k3		2.19.2	2.19.2*
2.19.3	1.24.4		2.19.3	2.19.3*
2.20.1	1.25.1c1		2.20.1	2.20.1*
2.20.2b	1.25.1a1	4.21a	2.20.3a	2.20.2*
	1.25.1d1,1e1		2.20.2	2.20.3*
	1.25.1f		2.20.15	2.20.4*
2.20.2a	1.25.1b		2.20.3b	2.20.5*
2.20.3	1.25.1g1,3ii		2.20.4,16	2.20.6*
2.20.4		4.21f	2.20.5	2.20.7*
2.20.5	1.25.3a1,3h1,1e2	4.21b	2.20.6,8	2.20.8*
	1.25.3b1	4.21c	2.20.9	2.20.9*
	1.25.3c1	4.21d	2.20.10	2.20.10*
2.20.6		4.21e	2.20.11	2.20.11*
2.20.7	1.25.3d	4.21g	2.20.12	2.20.12*
2.20.8	1.25.3e		2.20.13	2.20.13*
2.20.9	1.25.3fi		2.20.14	2.20.14*
	1.25.3g		2.20.8a	2.20.15*
2.21.1	1.25.1c2	1.97a, 4.22a	2.21.1	2.21.1*
	1.25.3e3	4.22b	2.21.2	2.21.2*
2.21.2		1.97b, 4.22c	2.21.3	2.21.3*
2.21.3	1.25.1g4	1.97c, 4.22d	2.21.4	2.21.4*
2.21.4	1.25.3f2		2.21.5	2.21.5*

<i>P</i>	<i>S</i>	<i>T</i>	<i>Diels</i>	<i>Mansfeld-Rumia</i>
2.22.1	1.25.1d3,1h		2.22.1,4	2.22.1*
2.22.2	1.25.1g2	4.22a	2.22.2	2.22.2*
2.22.3	1.25.1i1	4.22b	2.22.3,5	2.22.3*
2.22.4			2.22.6	2.22.4*
2.23.1	1.25.1d2		2.23.1	2.23.1*
2.23.2	1.25.3a2		2.23.2	2.23.2*
	1.25.3h2		2.23.7	2.23.3*
2.23.3	1.25.3e2		2.23.3	2.23.4*
2.23.6			2.23.6	2.23.5*
2.23.4	1.25.3c2		2.23.4	2.23.6*
2.23.5	1.25.3i2		2.23.5	2.23.7*
	1.25.3i2		Addenda p.853	2.23.8*
	1.25.3i2		Addenda p.853	2.23.9*
2.24.1	1.25.3b2		2.24.1	2.24.1*
	1.25.3e4,1i2		2.24.6,7	2.24.2*
2.24.2	1.25.1c3		2.24.2	2.24.3*
2.24.3	1.25.1g3		2.24.3	2.24.4*
2.24.4	1.25.1a2		2.24.4	2.24.5*
2.24.5			2.24.5	2.24.6*
2.24.6	1.25.3k1		2.24.8	2.24.7*
2.24.7	1.25.3k2		2.24.9	2.24.8*
2.25.1	1.26.1a1		2.25.1	2.25.1*
	1.26.1a2	4.23b	2.25.2,3	2.25.2*
2.25.2	1.26.1d	4.21a	2.25.4	2.25.3*
2.25.3	1.26.1k1		2.25.5	2.25.4*
	1.26.1i2			2.25.5*
	1.26.1f1		2.25.15	2.25.6*
2.25.4	1.26.1g		2.25.6	2.25.7*
	1.26.1h1		2.25.7	2.25.8*
	1.26.1e1	4.23a	2.25.8	2.25.9*
2.25.5	1.26.1e2	4.23c	2.25.9	2.25.10*
	1.26.1e3		2.25.10	2.25.11*
	1.26.1e4		2.25.11	2.25.12*
	1.26.1e5		2.25.12	2.25.13*
2.25.6	1.26.1e6	4.23e	2.25.13	2.25.14*
2.25.7	1.26.1e7	4.23d	2.25.14	2.25.15*
2.26.1	1.26.1k2	4.23e	2.26.1	2.26.1*
2.26.2	1.26.1b2	4.23f	2.26.2	2.26.2*
	1.26.1h2	4.23g	2.26.3	2.26.3*
		4.23h	2.26.4	2.26.4*
2.27.1	1.26.1k3		2.27.1a	2.27.1*
	1.26.1k3		2.27.1b	2.27.2*
2.27.3	1.26.1c		2.27.2	2.27.3*
	1.26.1i2			2.27.4*

<i>P</i>	<i>S</i>	<i>T</i>	<i>Diels</i>	<i>Mansfeld-Runia</i>
2.27.3	1.26.1f2		2.27.3	2.27.5*
2.27.4	1.26.1f3		2.27.4	2.27.6*
2.28.1	1.26.2a		2.28.1	2.28.1*
	1.26.2b		2.28.2	2.28.2*
	1.26.2c		2.28.3	2.28.3*
2.28.2	1.26.2d		2.28.4	2.28.4*
2.28.3	1.26.2e		2.28.5a	2.28.5*
	1.26.2e		2.28.5b	2.28.6*
2.28.4	1.26.2f		2.28.6	2.28.7*
2.29.1	1.26.3a		2.29.1	2.29.1*
2.29.2	1.26.3b		2.29.2	2.29.2*
2.29.3	1.26.3c		2.29.3	2.29.3*
2.29.4	1.26.3d		2.29.4a	2.29.4*
2.29.4	1.26.3d		2.29.4b	2.29.5*
	1.26.3e		2.29.5	2.29.6*
2.29.5	1.26.3f		2.29.6	2.29.7*
	1.26.3g		2.29.7	2.29.8*
			2.29.8	
2.30.1	1.26.4a		2.30.1a	2.30.1*
	1.26.4b		2.30.1b	2.30.2*
2.30.2	1.26.4c		2.30.2	2.30.3*
	1.26.4d		2.30.3	2.30.4*
	1.26.4e		2.30.4	2.30.5*
2.30.3	1.26.4f		2.30.5	2.30.6*
	1.26.4g		2.30.6	2.30.7*
	1.26.4h		2.30.7	2.30.8*
	1.26.4i		2.30.8	2.30.9*
2.31.1	1.26.5a	4.24a	2.31.1	2.31.1*
2.31.2	1.26.5b		2.31.2	2.31.2*
2.31.3	1.26.5c	4.24b	2.31.3	2.31.3*
	1.26.5d		2.31.4	2.31.4*
	1.26.5e		2.31.5	2.31.5*
2.32.1	1.8.42c1		2.32.1a	2.32.1*
	1.8.42c2		2.32.1b	2.32.2*
2.32.2	1.8.42c2		2.32.2a	2.32.3*
2.32.2	1.8.42c2		2.32.2b	2.32.4*
2.32.2	1.8.42c2		2.32.2c	2.32.5*
	1.8.42c2		2.32.2d	2.32.6*
	1.8.42c2		2.32.2e	2.32.7*
2.32.3	1.8.42c3		2.32.3	2.32.8*
2.32.4	1.8.42c4		2.32.4	2.32.9*
2.32.4			2.32.5	2.32.10*
3.0.1			3.0.1	
3.1.1	1.27.1		3.1.1	



<i>P</i>	<i>S</i>	<i>T</i>	<i>Diels</i>	<i>Mansfeld-Rumia</i>
3.1.2	1.27.2		3.1.2	
3.1.3	1.27.3		3.1.3	
3.1.4	1.27.4		3.1.4	
3.1.5	1.27.5		3.1.5	
3.1.6	1.27.6		3.1.6	
3.1.7	1.27.7ab		3.1.7	
3.1.8	1.27.8		3.1.8	
3.2.1	1.28.1a1		3.2.1	
3.2.2	1.28.1a2		3.2.2	
3.2.3	1.28.1a3-4		3.2.3	
3.2.4	1.28.1a5		3.2.4	
3.2.5	1.28.1a6		3.2.5	
3.2.6	1.28.1a7		3.2.6	
3.2.7	1.28.1a8		3.2.7	
3.2.8	1.28.1a9		3.2.8	
3.2.9	1.28.1a10		3.2.9	
3.2.10	1.28.1a11		3.2.10	
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Aëtiana

Volume Two

The Compendium

# Philosophia Antiqua

A Series of Studies on Ancient Philosophy

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VOLUME 114



# Aëtiana

The Method and Intellectual Context  
of a Doxographer

VOLUME TWO  
The Compendium

*By*  
J. Mansfeld and D.T. Runia

*Part Two*



BRILL

LEIDEN • BOSTON  
2009

This book is printed on acid-free paper.

Library of Congress Cataloging-in-Publication Data

LCCN: 96042463

ISSN 0079-1687

ISBN 978 90 04 16987 6 (part 2)

ISBN 978 90 04 17206 7 (set)

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PART TWO

AËTIUS BOOK II  
*SPECIMEN RECONSTRUCTIONIS*



## INTRODUCTION

### 1. *Carrying out a promise*

In the final sentences of vol. 1 of our studies on Aëtius, as also in the Introduction to the present volume, we announced that we would be presenting a *specimen reconstructionis* of Book II on cosmology, the best preserved part of his original compendium.<sup>1</sup> A thorough analysis of the methods of the primary witnesses, and particularly of S,<sup>2</sup> allows us to conclude that in all likelihood we possess this part of the work in an almost complete state—complete enough to allow us to set about reassembling it with a fair degree of confidence, once we have understood the methods of the later compilers and writers who made use of it for their own distinct purposes. We are now in a position to present the results of our analysis and reconstruction in this second Part of our study.

It is crucial to note that in undertaking this reconstruction we depart significantly from the practice of our great predecessor Herman Diels. As we remarked at the end of our previous volume, when in his *Doxographi Graeci* Diels was faced with the challenge of publishing this major doxographical text, he reached a solution that was neither chalk nor cheese.<sup>3</sup> He printed two columns purporting to present the text of the two fullest witnesses P and S. However, these columns did not contain the text as the mss. have handed it down to us. There was significant contamination from the one column to the other. After all, as the horizontal brace at the top of each page indicates, the aim was to present the text of Aëtius. But at the same time Diels tried tenaciously to preserve the sequence of the text as it is found in P, because he was convinced that the *Epitome* faithfully preserved the skeleton of the original work. Plainly what was needed was a single column reconstruction, but then he would not have been able to give as clear an overview of

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<sup>1</sup> Vol. I:332, cf. I:xiv.

<sup>2</sup> Vol. I:213–271, and esp. 233–236.

<sup>3</sup> Vol. I:332.

the text of the major witnesses. Interestingly, in the ‘Prolegomena’ of *DG*, when he presents the famous *conspectus* of Theophrastean material excerpted in the doxographical sources (as he thought), he does print the Aëtian material in a single column.<sup>4</sup> This method is continued in his edition of all the Presocratic material in the *VS*. So, in spite of his method in the *DG*, Diels did come to the conclusion that a unified text was required, and in this many, but not all scholars, have followed him.<sup>5</sup>

The other way in which our text differs fundamentally from that of Diels is that it is a ‘reconstruction *raisonnée*’. In his ‘Prolegomena’ Diels gives a detailed and perspicacious account of the various witnesses and makes observations on individual texts, to which he then cross-refers in the apparatus to the texts themselves.<sup>6</sup> But this is far from sufficient to explain all the moves that he makes in the text. These very often simply have to be deduced from the final result. We have here the chief reason for our decision to give a *specimen reconstructionis* of a major part of the work. By examining a significant number of well-preserved chapters we will be in a much better position to understand the aims and method of the work as a whole. It is called a *specimen* because it is meant to offer an extended *sample* of how such reconstruction should be undertaken, which may then serve as the basis for the badly needed reconstruction of the entire work.<sup>7</sup> The method of detailed analysis and reconstruction that we use is a lengthy and complex process, unavoidably involving the printing of similar, even in some cases, identical texts. But we do not apologize for our *specimen*’s length or for any perceived surfeit of detail. Philological craftsmanship must go hand in hand with philosophical insight if we are fully to understand these obscure yet vitally important texts.

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<sup>4</sup> *DG* 131–144; on these columns see Mansfeld (1998b) 20 and *passim*, Vol. I:89–97, 111–120.

<sup>5</sup> Not, for example, by Fortenbaugh *et al.* and Mouraviev in their editions of the fragments of Theophrastus and Heraclitus respectively.

<sup>6</sup> See esp. *DG* 1–27, 45–69. Note that these cross-references are often wrong because they refer to an earlier version of the manuscript with different page numbering.

<sup>7</sup> Which we intend to undertake in the next part of our project. See the Introduction to the entire volume above and the Epilogue below.



## 2. *The method and presentation of the reconstruction*

Our reconstruction is based on the analyses of the aims and methods of the primary witnesses in vol. I of our study, together with our understanding of the doxographical method practised by Aëtius and other authors as presented in that volume, in Part I of this volume, and in various other studies that we have published. Its basic hypothesis, shared with Diels, is that P's *Epitome* gives a reasonably accurate image of the macro-structure of the original work.<sup>8</sup> Accordingly we proceed chapter by chapter through the Book. Each chapter has six components of unequal length.

First we give the *numbering* and *title* of the chapter, as based on the analysis and reconstruction that follows. Although the number of chapters in our reconstruction is not the same as in P (there are three more), we retain the numbering of P as much as possible in order to avoid confusion with existing editions.<sup>9</sup> This is followed by a *listing of the witnesses* available for this particular chapter, presented in the fixed order: P and his tradition, S, T, and finally other witnesses, such as Ach, the *Doxographica Pasquali* and very occasionally Philo, who do not have direct knowledge of A but present material that goes back to traditions related to him.

Thirdly we present an *extended analysis* of the available witnesses and the contents of the chapter. The analysis is of variable length, depending on the size and complexity of the chapter, but invariably follows a more or less fixed procedure, as follows:

(a) The context and subject matter of the chapter are introduced. We take note of the kind of problem or question the chapter poses, and how this is related to the rest of the book and the work as a whole. Occasional remarks are also made about particular aspects or points of interest that the chapter offers.

(b) We then examine the witnesses in the same order as their earlier listing. First we scrutinize the text as furnished by P and his tradition, printing the text as found in the Byzantine manuscripts and giving each doxa a separate number. Then follows a brief discussion of the addi-

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<sup>8</sup> This hypothesis cannot be proven beyond all possible doubt, but it is a very reasonable and fruitful assumption. It is largely confirmed by analyses of the diaeretic structure of P and his epitomator G.

<sup>9</sup> The additional chapters are indicated by adding an 'a', i.e. 2.2a, 2.5a, 2.17a (in Greek we add a + sign, i.e. β<sup>+</sup>, ε<sup>+</sup> and ιζ<sup>+</sup>).

tional material supplied by the remaining witnesses in the tradition of P, with particular attention paid to variations in the chapter heading and important textual issues. We offer no separate analysis of P's method, but sometimes make general comments.<sup>10</sup> (The only exception to this procedure is found in ch. 28–31, where it makes more sense to start with S's evidence because he writes out these chapters in full.) The analysis then moves to the evidence of S. We print out the material in full, indicating how the anthologist excerpts his material. Once again we only make limited comments on the resultant material. It is followed by the evidence of T, for which we often need to examine the context in his work. Particular attention is paid to the question of whether T supplies evidence of material not found in P or S. Finally we print out material from the remaining witnesses, indicating its context and points of interest that it raises. The texts of the witnesses are in all cases printed as taken from the best editions available to us. These are listed in the *sigla* at the beginning of the *specimen*.<sup>11</sup>

(c) On the basis of the material furnished by the witnesses we first attempt to reach a provisional view of the number and order of the doxai contained in the original chapter. We draw attention to uncertainties attaching to these provisional results. These then form the basis of a deeper analysis, in which we try to ascertain the underlying structure of the chapter. Our procedure here is based on the conviction that the doxographical method used by A is primarily based on the analysis of problems into positions, set out by means of the structural method of the diaeresis and its twin the diaphonia.<sup>12</sup> To these positions name-labels of philosophers and other thinkers in the tradition have been attached, a process that also takes into account the place of these philosophers in the tradition.<sup>13</sup> The resultant doxai are ordered in

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<sup>10</sup> The aim is to establish the text of P via his tradition. From a puristic point of view it might be preferable to do the same with P as we do with A, i.e. print out all the various texts in his tradition and determine as best we can what his original text might have looked like. The text in the Byzantine mss. would then be P<sup>byz</sup> and the final result would be P. We have not followed this procedure for pragmatic reasons. It would make the analysis even longer than it is already and result in many virtually identical texts being printed three times or even more.

<sup>11</sup> In most cases they meet the demands of modern text-critical standards. Only the 19th century texts of Stobaeus by Wachsmuth and of ps.Galen by Diels give rise to some concerns. Some manuscripts will need to be consulted for a definitive *Lesetext* of Aëtius.

<sup>12</sup> We build here on the results of research set out in Part I sect. 1 and *passim*.

<sup>13</sup> For the interplay of these two structural elements, see the analysis in Part I sect. 7.

a particular way, for which the *raison d'être* can be established in most cases (though certainly not all). In this deeper analysis we distinguish between a number of different kinds of diaeresis which we will set out in more detail in the additional remarks below. It goes without saying that, in determining the structure of the various chapters, it will not be possible to discuss the contents and provenance of all the more than 200 doxai attributed to 45 authors which they contain; and for the most part we refer to scholarly discussions only when these are relevant to our analysis.<sup>14</sup>

(d) In establishing the diaereses or divisions that underlie the chapter, it will often be useful, or even essential, to look at other texts that can help us pin down the basic divisions underlying the chapter's structure. These can be derived either (1) from a dialectical context, e.g. (a) in theoretical discussions outlining philosophical problems or (b) in rhetorical discussions giving examples of how to tackle such problems, or (2) from other doxographical passages, whether (a) in doxographical sources or (b) in other writers making use of such material. We treat this material in various ways: sometimes we discuss it at the beginning of the deeper analysis because it provides us with a vital clue, but more often our discussion follows the analysis and serves to confirm or shed additional light on that analysis. The actual texts are listed in the final part of the chapter, as discussed below.

(e) Finally we frequently end our analysis by making some comments on how the chapter and its contents relate to the broader doxographical tradition, and in particular to the tradition anterior to A himself, i.e. from the 4th to the 1st cent. BCE. Here we do not presuppose any earlier theories on the tradition, e.g. Diels' postulation of a *Vetusta Placita*, but we do sometimes point out avenues of research on this tradition that we hope to pursue on a later occasion.

Next we briefly present two *schemata* of the structure of the chapter as we have analysed them. The first of these is a schematic summary of how the sequence of doxai in the chapter is arranged. The second presents the same analysis in diagrammatic form. In both cases the role of the diaeresis and the diaphonia are crucial. We shall explain the way we have represented these structural techniques in the following section of this Introduction.

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<sup>14</sup> Both Daiber in his edition of Q and Lachenaud in his edition of P give copious references to the scholarly literature on individual doxai in their notes.

Following on the analysis of the chapter we are then in a position to present a textual *reconstruction*. We first print the reconstructed Greek text, beginning with the heading and treating each doxa as a separate numbered unit. The beginning of a doxa is almost always marked by a name-label introducing a new opinion or in some cases confirming an opinion already held by others. Only very rarely does a doxa introduce a new subject without a change of name-label. Raised numbers in the text indicate variations in the text, which are explained in the textual apparatus beneath the text. It is important to note that our reconstruction aims to provide no more than a *Lesetext*. It takes its starting-point in existing editions and is not meant to be a critical text based on examination of all the relevant manuscripts.<sup>15</sup> A separate apparatus indicates where the doxai of individual authors can be located in fragment collections: for Presocratic authors we give only the reference to Diels *VS*, while for later authors we refer to the most recent collection. Finally we print an English translation of our reconstructed text. This is meant only as a guide to the reader, and for this reason gives a rather literal and non-literary rendition of the original. A's text is highly compressed, with many words having to be supplied from the context. Words in parentheses represent supplements needed to provide a fluent text.

The final section of each chapter consists of a listing of what we call *dialectical-doxographical parallels*. As indicated above, these texts show how A's material is embedded in a broader philosophical (and sometimes rhetorical) context, and are used to shed light on the basic intent and structure of his presentation. They are presented in chronological order, starting from Plato (or very occasionally earlier) and going through to the end of antiquity. Important texts are printed in full; some are abridged or given in the form of a reference only. The parallels are called *doxographical* because they record opinions and often show some kind of relation to doxographical traditions. Perhaps more importantly, they are also called *dialectical* because they are so often taken from contexts that involve argument and taking sides in a discussion.<sup>16</sup> In principle these texts will almost always indicate some kind of discussion or disagreement or will refer to the subject of such discussion

<sup>15</sup> Where there are important variants in a tradition, e.g. in P, we do not refer to manuscripts but indicate the readings via the sigla P<sup>1</sup>, P<sup>2</sup> etc.

<sup>16</sup> It is obvious that we use the term in a broad or even loose sense, relating to philosophical discussion and dispute, and not in the narrower sense inaugurated by Aristotle, who for example at *Top.* 8.2 158a16 limits it to questions to which only yes or no can be given as an answer.

or disagreement. They are particularly valuable for the way they set out, and sometimes give structure to, the discussion of particular topics and themes that are central to A's chapters. Because of our focus on dialectical discussion, we do not for the most part include texts which illustrate or give a parallel for just a single doxa in the chapter on its own, including the material found on individual authors in doxographical compendia such as those of Hippolytus, of ps.Plutarch *Stromateis* and in Diogenes Laertius. We have aimed at giving rather full lists of parallels, but it is obviously not possible to give all the relevant material that is found in extensive late ancient compilations such as the commentaries on Platonic and Aristotelian texts. An index to all these parallels is found at the end of the volume.

### 3. *Organizing and presenting the Placita*

It will be apparent to even the most casual reader of the *Placita* that the *chapters* of the work, as preserved in P, have for the most part been arranged and ordered in a carefully thought out sequence. In the case of the individual *doxai* within a chapter the situation is less clear, because the chapters need to be reconstructed. Here too, however, it must be surmised that the doxai have not been assembled in an altogether random fashion. Single chapters too bear the mark of deliberate ordering. It will thus be a priority to try to understand the rationale behind such arrangements.

After spending nearly twenty years studying these documents, we are convinced that the arrangement of individual chapters is linked to methods of philosophical, and in particular dialectical, argument as it developed in the centuries from its first beginnings in the period before Plato to the first centuries BCE and CE.<sup>17</sup> The chief methods used can be summarized under the headings of the *diairesis* (division) and the *diaphônia* (disagreement). The former, already prominent in the work of Aristotle and Theophrastus, is used to organize philosophical views into orderly patterns that form the starting-point for serious analysis and/or discussion. The latter, sometimes implicitly present in the Peripatos but considerably developed by the New Academy, emphasizes the clash of views—often summarized by means of a bipolar opposition—and is

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<sup>17</sup> For what follows, see esp. Mansfeld (1987), (1989b), (1990a), (1992a), Runia (1999a).

meant to lead to the suspension of views at the end of the discussion.<sup>18</sup> These methods, combined with other techniques, such as the ordering of doxai on systematic or—much less often—diadochic or chronological grounds, have left their mark on the collections as they have come down to us, and it is important to take them into account.

We emphasize that our method does not involve trying to impose a structure on the contents of a chapter. Rather, it takes as its starting-point the evidence of the witnesses and our understanding of how the witnesses have dealt with the original text. Being able to recognize the influence of a diaeresis or a diaphonia (often known from parallels in other writings) helps us understand the rationale of the chapter, and on many occasions can confirm the ordering of the lemmata as determined by our analysis of the witnesses. The method is thus essentially heuristic, enabling us to gain a better understanding of a chapter's contents and structure. (For further justification of this procedure, which might give rise to suspicions of circularity, see below.)

In our analysis of the structure of individual chapters we make consistent reference to three types of arrangement. Each of these can be related to procedures in dialectical and doxographical argument, although they are not directly based on them, but rather on the evidence of the chapters themselves.

(1) The first is what we call a *type A diaeresis*, indicating a division of opinion into two opposed viewpoints or doctrines. Its basic method is thus one of opposition or (in less contentious cases) juxtaposition. For example the nature of the heavenly bodies is either fiery or earthy (i.e. hot rock). This type is obviously related to the diaphonia as frequently found in sceptical texts. But it can also be related to procedures in Aristotelian dialectic, as e.g. when Aristotle gives as an example 'whether the cosmos is everlasting or not' (*Top.* 1.11, 104b9), to which the answer yes or no must be given. In this case the diaeresis is disjunctive (i.e. A or not-A), but it is not essential for it to be such, as the earlier example given above indicates. In the structural diagram we generally indicate this type with the positions A and B connected by an angle bracket (see the illustration below).

(2) The second kind we call a *type B diaeresis*. In this case the opposition set out in the type A diaeresis is mediated by a third position. Its basic method is thus one of compromise or exception. One can imag-

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<sup>18</sup> On the link between the diaeresis and the diaphonia see Mansfeld (1990a) 3173. The importance of the diaeresis in A's work is accepted by Laks (1997) 257.

ine, in the dialectical situation, that a participant might say, instead of yes or no, yes and no, or in some respects yes and in other respects no. In the example given above, a view on the nature of the heavenly bodies could be presented as a compromise view between the two primary views, for example a condensation of air filled with fire, or a earthy object filled with fire, and so on. A compromise view may also be brought into play if a further question is introduced; for example, in the case of the question whether the cosmos is governed by providence, the answers yes or no can be mediated by a further question whether providence extends throughout the entire cosmos, making possible a compromise position that the cosmos is partly governed by providence, i.e. in heaven, and partly not, i.e. on earth (cf. ch. 2.3\*). In our diagrammatic representation of this type the angle bracket is mediated by a third line between the original two.

(3) The third kind we use is called a *type C diaeresis*. In this case the views are presented as a sequence without a definite opposition between any of them. The basic method here is one of sorting by means of a list. For example the shape of the cosmos can be like a ball or an egg or a cone or a cylinder, and so on (cf. ch. 2). Of course within the list it is possible to introduce a form of ordering, e.g. an ascending sequence or a gliding scale, but this is a secondary aspect. In the dialectical situation such a listing may occur when the dialectician (or the investigator commencing his research) surveys all the answers that can be or have been given to the subject in question.<sup>19</sup> A good example of such a listing is found in the doxographical practice of numbered lists, e.g. the principles of reality are one (monism) or two (dualism) or three or four, and so on up to infinity. This method is first attested in Gorgias, and is common in authors ranging from Aristotle to Sextus.<sup>20</sup> We might also compare an argument which Simplicius calls the διαίρεσις διὰ πλείονων: there are four theoretical positions that can be or have been taken on the notion of place, A, B, C or D; if A, B and C are unpersuasive, then D must be the correct one.<sup>21</sup> Here the division

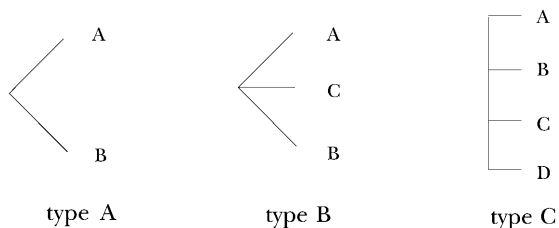
<sup>19</sup> A good example is found in Arist. *DC* 2.13, where he reflects on his procedure at 294a9–14 using the language of the diaeresis and division into genus and species in order to describe the objections that can be raised on a particular question.

<sup>20</sup> See the discussion at Mansfeld (1990a) 3157–3161.

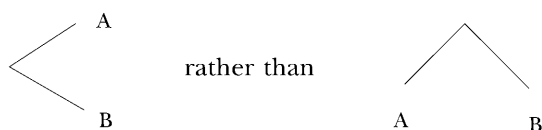
<sup>21</sup> Simp. in *Phys.* 571.19–35, commenting on Arist. *Ph.* 211b5–10. The positions mentioned are those of Democritus and his successors, including Epicurus and the Stoics, Plato and Aristotle (the Stoics appear to be in the place of Strato); cf. A 1.19, where three of the four positions cited by Simplicius on the basis of Aristotle's text are given.

must be exhaustive for the argument to work, but in the doxographical perspective, which of course is not argumentative in the same sense, this is unnecessary. We represent this type of diaeresis in our diagrams by means of a straight line in order to distinguish it from the other two.

The three types of arrangement that we use can thus be represented schematically as follows:



The structural diagrams that we include in our treatment of each chapter (see sect. 2 above) consist of permutations and combinations of these three basic types of diaeresis. It is possible, for example, that a type A diaeresis in the form of a diaphonia will have, for each of its poles, a list of alternatives in a type C diaeresis. In some cases diaereses can be linked together in a dichotomous tree-like structure in the manner of the classic Platonic diaeresis or the *arbor Porphyriana*. This occurs, for example, in A's presentation of views on the seat of the ruling part of the soul in 4.5.<sup>22</sup> In Book II, however, it is only found in a modified form, when a second question is added to the main subject, e.g. in ch. 2.1\*. It should be noted that we present the diaereses in our diagrams horizontally rather than vertically as is usually done, i.e.



because this corresponds visually better to the sequence of lemmata as they proceed down the page in the reconstructed text.<sup>23</sup>

A word should be devoted our use of the term 'diaeresis'. In our analysis we use it in the first instance with reference to philosophical *views*, e.g. an opposition between view A and view B on subject X,

<sup>22</sup> Cf. the analysis at Mansfeld (1990a) 3092–3099.

<sup>23</sup> Here ch. 2.1\* forms an exception because it includes a double diaeresis.



but naturally there is a close connection with the realia on which those views are held, e.g. the generated or ungenerated nature of the cosmos.<sup>24</sup> The primary focus of the term is thus on the making of conceptual divisions and distinctions. It will be apparent that, although the term is often used of a subject that can be loosely formulated in terms of a genus/species relation, it is not used in the sense of a rigorous logical division.<sup>25</sup> This means that in many cases the listing of the members of the diaeresis is not exhaustive, e.g. in the example given above of the heavenly bodies being either fiery or earthy. Other possibilities on this issue can certainly be envisaged. Of course if the diaphonia is cast in the form of an exclusive disjunction (the cosmos is either φθαρτός or ἀφθαρτος), then the diaeresis is exhaustive, but this occurs only in a minority of cases. The most contentious case is the listing of views made in the type C diaeresis. One might question whether it is wise still to speak of a diaeresis in such an instance, since diaeresis is generally thought of as dichotomous.<sup>26</sup> But here too we are following ancient precedent. For example Diogenes Laertius happily states in his doxography of Stoic physics (7.132) that people *divide* the φυσικὸς λόγος into the subjects of bodies, principles, elements, gods, limits, place and void. This is plainly a listing. Many other texts can be given in which a subject is divided into a number of components which amount to a non-exhaustive listing.<sup>27</sup>

<sup>24</sup> Strictly speaking a doxa is a propositional judgment on a property of an object.

<sup>25</sup> On the logical diaeresis and its requirements see Joseph (1916) 115–135; on ancient diaeresis in general Mansfeld (1992b) 326–331.

<sup>26</sup> See further Part I, Index rerum *s.v.* diaeresis.

<sup>27</sup> One could appeal to the logical category of physical division (*partitio* or μερισμός), in which the parts of an individual thing are distinguished; cf. Joseph (1916) 132. But the division in the example given is certainly not of a physical thing. The process of classification is also relevant. Other examples of division as a *de facto* listing at D.L. 3.80–109 (= *Div. Arist.*), 7.84; cf. also S.E. *Adv. Log.* 1.11. For a casual non-exhaustive use of the concept of diaeresis see Cicero's description of the structure of his edict at *Ep. ad Att.* 6.1.115 §15 (he uses the Greek term). Another example is the use of diaeresis to divide a word into its various meanings; cf. Alcinous *Did.* 5.2. One can also compare the use of division in the composition of systematic Τέχναι, i.e. textbooks or handbooks; cf. Fuhrmann (1960) 17 who writes of the Τέχνη of Anaximenes (contemporary of Aristotle) that, instead of dividing genera into species, he tends to present 'Dispositionsschemata' which outline the structure of his discussion, usually involving divisions with two or three parts, but the number can go as high as seven or eight. See further Part I sect. 1 and esp. n. 5, where much of the above evidence is discussed.

#### 4. *Limitations and validity of our method*

By means of the *specimen reconstructionis* which we offer in these pages, we aspire to recovering an ancient text which has been epitomized, excerpted and adapted for a variety of different purposes. We are well aware that the end result cannot be regarded in the same light as the critical edition of a text that has survived in manuscript form or as a papyrus. In the establishment of texts of the latter sort there always remains an element of approximation: it is of course an illusion to think that we can ever reproduce the original words of the writer with any certainty. But in the case of the critical edition the text is either complete or lacunae can be identified with some confidence. In the case of A, by contrast, there are large parts of the work which are certainly incomplete and can never be recovered unless more primary evidence comes to light. To be sure, Book II is a privileged case, because it is as good as certain that our witnesses have preserved it in a virtually complete state (our estimation is that we have at least 95 %, i.e. with no more than a dozen lemmata missing at the very most). The resultant reconstruction thus gives us an excellent picture of what *this part* of A's work was like. Other parts, esp. Books I and V, will have differed, but the resemblances will always be greater than the differences.<sup>28</sup> Even in the privileged case of Book II a reconstruction must retain a stochastic element, but here at least the uncertainties are limited. It is the best we can do.

In attempting the difficult task of determining the original appearance of the work, we must exploit all resources at our disposal. As we have emphasized above, our starting-point is always the evidence of witnesses and our understanding of how they have treated, and made use of, the contents of the original book. The method is thus primarily based on the available texts. At the same time, in order to complete the reconstruction, we have had to rely on an understanding of how A's doxographical method works, based on lengthy study both of his remains and of the wider doxographical context. If this were to mean that we were presenting the reconstruction that merely conformed to our expectations or (even worse) to what we wanted to find, then our method would be circular and vitiated. But we are convinced that this is not the case. There are objective grounds for thinking that A organized the contents of his individual chapters in accordance with certain

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<sup>28</sup> See further the analysis of various sections of the work in Part I.

principles and by means of certain techniques, including the attempt to produce a degree of systematic correlation between the contents of the chapter and its internal organization. We have taken this feature of his work into account in our reconstruction, but have not allowed it to outweigh the evidence of the witnesses, which must in all cases remain primary. At most we admit to subscribing to, and applying the principle of charity: that is, we are inclined to take our author seriously and to assume that he knew what he was doing, in relation both to the contents of his work and the tradition in which he was operating. Our approach thus differs markedly from the negative and sometimes quite scathing attitude taken by Diels in his attempt to reconstruct the work 130 years ago. Indeed this difference in method lies at the very heart of our justification for undertaking to revise his very considerable achievement.<sup>29</sup>

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<sup>29</sup> See our remarks in Vol. I:xvi and ch. 2 (esp. 99–101).



AËTIUS BOOK II  
*SPECIMEN RECONSTRUCTIONIS*



## SIGLA

### (1) Ancient authors

A	Aëtius
Ach	Achilles, <i>Isagoge</i>
AD	Arius Didymus
<i>Dox. Pasq.</i>	<i>Doxographica Pasquali</i>
E	Eusebius, <i>Praeparatio Evangelica</i>
G	ps.Galen, <i>Historia philosopha</i>
N	Nemesius, <i>De natura hominis</i>
P	ps.Plutarch, <i>Placita philosophorum</i> (Byzantine mss.)
P <sup>1</sup> , P <sup>2</sup>	variant textual readings in P's mss. (P <sup>1</sup> generally the majority reading)
Ⓟ	ps.Plutarch and his tradition (EGQ etc.)
pap	papyrus
Q	Qusṭā Ibn Lūqā
S	Stobaeus, <i>Eclogae physicae</i>
Sch	Scholia
T	Theodoret, <i>Graecarum affectionum curatio</i>

### (2) Critical texts used for witnesses to Aëtius and his tradition (for full details see the bibliography)

Ach	Maass, Di Maria (both cited because the more recent text is fairly inaccessible)
Cyril	Burgière & Évieux
<i>Dox. Pasq.</i>	Pasquali and Amand de Mendieta & Rudberg
E	Mras (also for ps.Plut. <i>Stromateis</i> )
G	Diels
Lydus	Wuensch
P	Mau and Lachenaud (Mau usually our starting-point)
Philo	Cohn & Wendland
Q	Daiber
S	Wachsmuth
Scholia Aratea	Maass
T	Raeder

## (3) Cross-references

- \* numbering of doxai as presented in our reconstruction
- ¶ chapter of Aëtius' compendium
- § lemma of Aëtius' compendium
- ch. chapter of the *specimen reconstructionis*
- sect. section of Part I or of the Analysis in Part II

For abbreviations of secondary sources and other works see the Sigla in Part I and the Bibliography.



Aëtius *Placita* 2. *Titulus et Pinax*

WITNESSES

Ps.Plutarch 2. *Titulus et Pinax*

ANALYSIS

1. In the Byzantine mss. of ps.Plutarch Book II begins with its title as follows:<sup>30</sup>

ΠΕΡΙ ΤΩΝ ΑΡΕΣΚΟΝΤΩΝ  
ΤΟΙΣ ΦΙΛΟΣΟΦΟΙΣ  
ΦΥΣΙΚΩΝ ΔΟΓΜΑΤΩΝ ΕΠΙΤΟΜΗΣ  
ΤΟ Β'

In the absence of further evidence it has to be determined what relation P's title bears to what stood in A's compendium. In Vol. I:323–327 we argued that the evidence in T points to the title being the simple formulation Περί ἀρέσκοντων. Certainly the reference to an epitome in the above title will have been added by P. But we now think there are good grounds for thinking that A's title may have been closer to what we find in P. See the discussion in Part I sect. 2. So in our reconstruction we take over P's title without the added reference to the epitome (note that this word is missing in the title of the entire work and in the title for Book IV, but does occur in the titles of Books II, III and V—for the last two ἐν ἐπιτομῇ rather than ἐπιτομῆς).<sup>31</sup>

2. The text in P then continues with the words ἐν ᾧ κεφάλαια τάδε, which introduce the *pinax* or table of contents for the book. The table of contents is only found in the manuscripts of P, not in Q<sup>32</sup> (or

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<sup>30</sup> This is the title in the ms. Mosquensis 501, taken over by both Mau and Lachenaud. Other mss. have slightly different variants. The above-mentioned scholars place the full title in their text. Diels has only ΒΙΒΛΙΟΝ ΔΕΥΤΕΡΟΝ as the title of the book.

<sup>31</sup> But there is too much variation in the mss. for certainty in relation to any of the titles.

<sup>32</sup> As far as we can tell, Daiber at no stage mentions any *pinakes* in Q (but does not mention the subject either). Note that not all Greek mss. contain the *pinakes*. Diels did not include them in his edition, but preceded his reconstruction of A with

EG).<sup>33</sup> In Part I section 17 we have argued that it is likely that the compendium was an early example of a work that included such tables of contents for each book. The argument consisted of two steps. Firstly it can be shown that A must have had chapter headings for each chapter, since there are many cases when the contents of individual lemmata in a chapter cannot be understood without the chapter title.<sup>34</sup> The evidence of Photius too points to chapter titles in A's work. Secondly, to judge by the practice of an author such as Pliny in his *Natural History*, tables of contents may have chronologically preceded chapter titles.<sup>35</sup> This admittedly not very strong argument suggests that A included tables of contents for his books. An additional argument would be that in a work that displays such a clear and intentional structure, the author would have been keen to put it on display. If A's compendium is dated to the second half of the 1st cent. CE it would be an early example of the practice.<sup>36</sup> On balance, therefore, the table of contents should be included in our reconstruction.

3. For the headings themselves we are so bold as to present the headings as we have determined them for the individual chapters of the reconstruction. As discussed at some length in Vol. I and further in briefer terms in Part I of this volume, there is considerable variation in the length of chapter headings in our various witnesses, making it very difficult to determine what exactly they were in the original version of P, and before him, A. We have concluded that the length and precise wording of chapter headings was not a matter of rigorous discipline, but rather of convenience, depending on what the compiler or excerptor wished to do in his particular context.<sup>37</sup> In the table of contents for Book II we of course include the three additional brief chapters that we consider to have been epitomized away by P. As indicated above in our introductory remarks, we have for the sake of convenience adhered as

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a list which he called 'Plutarchi de Placitis epitomes index capitum' (*DG* 268–269). Its contents correspond to the titles given in his edition. He neither discusses the subject of the *κεφάλαια* in his Prolegomena nor refers to them in the critical apparatus of his edition.

<sup>33</sup> Although the *pinax* of Eusebius *PE* Book XV bears more than a superficial resemblance to the *pinax* in P because so many chapter headings in 15.24–61 are taken from P.

<sup>34</sup> See the many examples from Book II given in Part I sect. 17 preceding n. 421.

<sup>35</sup> See Part I n. 419.

<sup>36</sup> See again the discussion in Part I.

<sup>37</sup> See above Part I sect. 17 text preceding n. 417.

much as possible to P's numbering, and so have given these additional chapters a (non-authentic number) by adding a + sign (e.g. β<sup>+</sup>).

# RECONSTRUCTED TEXT

## ΠΕΡΙ ΤΩΝ ΑΡΕΣΚΟΝΤΩΝ ΤΟΙΣ ΦΙΛΟΣΟΦΟΙΣ ΦΥΣΙΚΩΝ ΔΟΓΜΑΤΩΝ ΤΟ Β<sup>1</sup>

ἐν ᾧ κεφάλαια τάδε·

- α'. Περὶ κόσμου
- β'. Περὶ σχήματος κόσμου
- ⟨β<sup>+</sup>. Περὶ κινήσεως κόσμου<sup>2</sup>⟩
- γ'. Εἰ ἔμψυχος ὁ κόσμος καὶ προνοία διοικούμενος
- δ'. Εἰ ἄφθαρτος ὁ κόσμος
- ε'. Πόθεν τρέφεται ὁ κόσμος
- ⟨ε<sup>+</sup>. Ποῦ ἔχει τὸ ἡγεμονικὸν ὁ κόσμος<sup>3</sup>⟩
- ζ'. Ἀπὸ ποίου πρώτου στοιχείου ἤρξατο κοσμοποιεῖν ὁ θεός
- ζ'. Περὶ τάξεως τοῦ κόσμου
- η'. Τίς ἡ αἰτία τοῦ τὸν κόσμον ἐγκλιθῆναι
- θ'. Περὶ τοῦ ἐκτὸς τοῦ κόσμου, εἰ ἔστι κενόν
- ι'. Τίνα δεξιὰ τοῦ κόσμου καὶ τίνα ἀριστερά
- ια'. Περὶ οὐρανοῦ, τίς ἡ τούτου οὐσία
- ιβ'. Περὶ διαιρέσεως οὐρανοῦ, εἰς πόσους κύκλους διαιρεῖται
- ιγ'. Τίς ἡ οὐσία τῶν ἄστρον, πλανητῶν καὶ ἀπλανῶν
- ιδ'. Περὶ σχημάτων ἀστέρων
- ιε'. Περὶ τάξεως ἀστέρων
- ιζ'. Περὶ τῆς τῶν ἀστέρων φορᾶς καὶ κινήσεως
- ιζ'. Πόθεν φωτίζονται οἱ ἀστέρες
- ⟨ιζ<sup>+</sup>. Πόθεν τρέφονται οἱ ἀστέρες<sup>4</sup>⟩
- ιη'. Περὶ τῶν ἄστρον τῶν καλουμένων Διοσκούρων
- ιθ'. Περὶ ἐπισημασίας ἀστέρων<sup>5</sup>
- κ'. Περὶ οὐσίας ἡλίου<sup>6</sup>
- κα'. Περὶ μεγέθους ἡλίου
- κβ'. Περὶ σχήματος ἡλίου
- κγ'. Περὶ τροπῶν ἡλίου
- κδ'. Περὶ ἐκλείψεως ἡλίου
- κε'. Περὶ οὐσίας σελήνης
- κς'. Περὶ μεγέθους σελήνης
- κς'. Περὶ σχήματος σελήνης

- κη'. Περί φωτισμῶν σελήνης  
 κθ'. Περί ἐκλείψεως σελήνης  
 λ'. Περί ἐμφάσεως αὐτῆς καὶ διὰ τί γεώδης φαίνεται  
 λα'. Περί τῶν ἀποστημάτων τῆς σελήνης<sup>7</sup>  
 λβ'. Περί ἐνιαυτοῦ, πόσος ἐκάστου τῶν πλανητῶν χρόνος, καὶ τίς ὁ μέγας ἐνιαυτός

- 
- 1 P<sub>1</sub>, P<sub>2</sub> τὸ βιβλίον β', βιβλίον δευτέρον  
 2 non exstat in P, addidi  
 3 non exstat in P, addidi  
 4 non exstat in P, addidi  
 5 add. P καὶ πῶς γίνεται χειμῶν καὶ θέρος  
 6 add. P καὶ ὅτι δύο καὶ τρεῖς εἰσιν  
 7 add. P πόσον ἀφέστηκε τοῦ ἡλίου

*ON THE PHYSICAL DOCTRINES  
 HELD BY THE PHILOSOPHERS  
 BOOK II*

in which the following headings (are found):

- 1 On the cosmos  
 2 On the shape of the cosmos  
 2a On the movement of the cosmos  
 3 Whether the cosmos is ensouled and administered by providence  
 4 Whether the cosmos is indestructible  
 5 Where does the cosmos obtain its nourishment from  
 5a Where does the cosmos have its regent part  
 6 From what kind of first element did the god begin to make the cosmos  
 7 On the order of the cosmos  
 8 What is the cause of the cosmos having been tilted  
 9 On what is outside the cosmos, whether a void exists  
 10 What are the right (parts) of the cosmos and what are the left  
 11 On the heaven, what is its substance  
 12 On the division of heaven, into how many circles is it divided  
 13 What is the substance of the heavenly bodies, both planets and fixed stars  
 14 On the shapes of the stars  
 15 On the ordering of the heavenly bodies  
 16 On the displacement and movement of the heavenly bodies  
 17 From where do the stars obtain their illumination  
 17a From where do the stars obtain their nourishment  
 18 On the stars that are called the Dioscuri  
 19 On signs of the seasons produced by the heavenly bodies  
 20 On the substance of the sun  
 21 On the size of the sun

- 22 On the shape of the sun
- 23 On the turnings of the sun
- 24 On the eclipse of the sun
- 25 On the substance of the moon
- 26 On the size of the moon
- 27 On the shape of the moon
- 28 On the illuminations of the moon
- 29 On the eclipse of the moon
- 30 On its appearance and why it appears to be earthy
- 31 On the distances of the moon
- 32 On the year, how great the time of (the revolution of) each of the  
planets is, and what the Great year is.

## Aëtius *Placita* 2.*Praefatio*

### WITNESSES

Ps.Plutarch 2.*Praef.*, Qusṭā Ibn Lūqā 2.*Praef.*

### ANALYSIS

1. After the table of contents the book commences with a brief authorial introductory passage. As we shall see below, it is paralleled by other introductory passages in P, but no term such as *προοίμιον* *vel sim.* is used to describe them. The passage has not been numbered in the editions. We too do not number it, but call it the *Praefatio*.

2. The text as preserved by P is as follows:

P2.*Praef.* τετελεγκὼς τοίνυν τὸν περὶ ἀρχῶν καὶ στοιχείων καὶ τῶν συνε-  
δρευόντων αὐτοῖς λόγον τρέψομαι πρὸς τὸν ἐπὶ τῶν ἀποτελεσμά-  
των, ἀπὸ τοῦ περιεκτικωτάτου πάντων ἐνοησάμενος.

The sentence is not included by ps.Galen and ignored by Cyril, who is only interested in cosmology and goes straight to P 2.1. Eusebius also has his own agenda, which he announces at *PE* 15.22.68. He first focuses on the parts of the cosmos which the ancients regarded as ‘visible gods’ and worshipped, before dealing with more religiously neutral cosmological subjects. This leads to P 2.20–22, 25–28 and 13–14 being cited first, before turning to 1.4–5 and 2.3–11. In this scheme there is no place for P 2.1–2 or the preceding prefatory remark. We thus lack other witnesses in the tradition of P except the translator Qusṭā Ibn Lūqā.<sup>38</sup>

3. The sentence is also not included by Stobaeus. This is not because it does not fit into his structural scheme. There is a clear transition from principles to cosmology at the beginning of 1.21 Περί κόσμου κτλ. But he seldom makes transitional comments in the first person and to do

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<sup>38</sup> Q is too inexact to help with the textual question whether to accept the conjecture *περί* instead of *ἐπὶ* in the phrase *ἐπὶ τῶν ἀποτελεσμάτων*. The correction, which Diels places in his text but Mau and Lachenaud reject, is quite unnecessary.

this through the excerpt of a text written by someone else in the first person would have been too awkward.<sup>39</sup> Moreover in some chapters (1.15, 18, 20) he combines material from Books I and II. Instead he commences with a description of the cosmos in Plato *Ti.* 30a–b.<sup>40</sup> Theodoret also moves from a discussion of ἀρχαί to the cosmos at 4.15, but chooses to emphasize the διαφωνία involved in both discussions. On the prefatory remarks in Achilles see below sect. 5.

4. The sentence describes the transition from Book I on the *principia* to the remaining books on the cosmos and its contents. In addition to the initial Preface at the beginning of Book I, similar transitions are found at three other points in P:<sup>41</sup>

- P 3.*praef.* περιωδευκώς ἐν τοῖς προτέροις ἐν ἐπιτομῇ τὸν περὶ τῶν οὐρανίων λόγον, σελήνῃ δ' αὐτῶν τὸ μεθόριον, τρέψομαι ἐν τῷ τρίτῳ πρὸς τὰ μετάρσια· ταῦτα δ' ἐστὶ τὰ ἀπὸ τοῦ κύκλου τῆς σελήνης καθήκοντα μέχρι πρὸς τὴν θέσιν τῆς γῆς, ἥτινα κέντρου τάξιν ἐπέχειν τῇ περιοχῇ τῆς σφαίρας νενομίκασιν. ἄρξομαι δ' ἐντεῦθεν.
- P 3.8.2 περιγεγραμμένων δέ μοι τῶν μεταρσίων, ἐφοδευθήσεται καὶ τὰ πρόσγεια.
- P 4.*praef.* περιωδευμένων δὲ τῶν τοῦ κόσμου μερῶν διαβήσομαι πρὸς τὰ κατὰ μέρος.

We thus have four transitions: from ἀρχαὶ καὶ στοιχεῖα to ἀποτελέσματα, from οὐράνια to μετάρσια, from μετάρσια to πρόσγεια, and from τὰ τοῦ κόσμου μέρη to τὰ κατὰ μέρος. These passages are crucial for an understanding of the organization of the *Placita* as they have come down to us.

In our witnesses all of these passages are found only in P (and Q). Were they originally present in A, or have they been added by P? Although the reference to epitomization in the preface to Book III might suggest the latter, there is a strong argument to support the former view. The formulation περὶ ἀρχῶν καὶ στοιχείων in our present text recalls the prefatory chapter at 1.2, τίνι διαφέρει ἀρχὴ καὶ στοιχεῖα. Most of this chapter is also taken up by S in his chapter entitled περὶ ἀρχῶν καὶ στοιχείων τοῦ παντός at 1.10, independently of P. It is to be

<sup>39</sup> An exception are the prefatory and concluding remarks when he presents his long excerpt of the summary of Stoic ethics from AD; cf. 2.57.15–17, 116.15–18. See also our remarks in Part I sect. 4 at n. 72.

<sup>40</sup> On this passage and esp. its opening words, see Vol. I:266 and below ch. 5 sect. 3.

<sup>41</sup> We cite here only the key authorial statements relating to the macro-division of books; for a more detailed discussion see Part I sect. 5.

agreed with Diels that this chapter, and the preface and first chapter in P (which S does not cite) to which it is connected by content and language, go back to A.<sup>42</sup> Together they form a general introduction to the work, before it embarks on the exposition on principles and related subjects in the rest of Book I.<sup>43</sup> A further consideration is that the words ἀπὸ τοῦ περιεκτικωτάτου clearly anticipate the description of the cosmos as περιοχή in the first lemma of A 2.1\*.

The key term in making the transition from Book I to Books II–V is ἀποτελεσμα (resultant product). It occurs three times in Book I: at P 1.2 (distinction between ἀρχαί as οὐ σύνθετοι, στοιχεῖα as σύνθετα—i.e. the four primary elements posterior to ὕλη—and ἀποτελέσματα); P 1.5.4 (contrast with αἷτια); P 1.11.1 (introductory definition of αἷτιον as <δι' ὃ> τὸ ἀποτελεσμα). The corresponding verb ἀποτελέομαι is used quite often for causing a product: at P 1.3.8 (877D), P 3.1.3, P 3.3.2, P 5.3.1 etc. The term is very common in Philo of Alexandria: note esp. *Opif.* 129 (opposition ιδέαι and ἀποτελέσματα, cf. also *Mos.* 2.76); *Her.* 209 (στοιχεῖα and ἀποτελέσματα as ἐναντία); *Fug.* 133 (distinction between τὸ δρῶν αἷτιον = τὸ πῦρ, τὸ πάσχον = ἡ ὕλη, and τὸ ἀποτελεσμα). Similar usage is found in the early chapters of G not derived from A: § 17, 610.5 Diels (αἱ ιδέαι, ἡ ἅποιος ὕλη, τὰ ἀποτελέσματα); § 19, 611.7 (contrast αἷτια and ἀποτελεσμα). The basic contrast is thus between cause (of whatever kind, whether material or non-material) and product. It is thus an ideal term to convey the transition to the remainder of the *Placita*, which deal with the features of the physical and material world. See further Whittaker's note on Alcinous *Did.* 14 170.1, who remarks that use of the term appears to have been stimulated by the Stoa (cf. Philo at *Fug.* 133 cited above), but was also taken over by Platonist authors (e.g. Plutarch *De facie* 1023c). The term has the advantage of being completely neutral, implying neither a technological (e.g. ἔργον) nor a biological metaphor (e.g. γένεσις).<sup>44</sup>

<sup>42</sup> As noted by Lachenaud (1993) 103 n. 1.

<sup>43</sup> Diels *DG* 57 states that he first wished to attribute them to P rather than A (his words *Aëtio nimis cupiens* imply that he first thought they were unworthy of him), but he came to realize that they were certainly 'Aëtiana'. But more important for Diels was his conclusion that they had been added by A to the 'limpidus fons' of the postulated *Vetusta Placita*; see our discussion in Part I sect. 3.

<sup>44</sup> Diels *DG* 100 erroneously declares that the proper use of the term is astrological, but he corrects himself in the index (724), where he writes 'opp. αἷτια vel ἀρχαί [στοιχεῖα]'.



5. A's sentence thus marks a transition from the *principia* discussed in Book I and the *realia* discussed in the rest of the work. As we have noted in Part I,<sup>45</sup> this division in subject matter between the two books is not absolute, because as part of this introductory section A has included chapters on how the cosmos was established (1.4) and whether the universe forms a unity (1.5). There is some overlap here with the beginning of Book II.<sup>46</sup> A first precedent for a transition from *principia* to *realia* can be found in that most influential of cosmological accounts, Plato's *Timaeus*, where the *proemium* (27d–29d) discusses metaphysical presuppositions (tantamount to principles) before turning to the creation of the cosmos at 29e.<sup>47</sup> A slightly different approach is taken by Aristotle in two introductory texts, *Cael.* 1.1 268a1–6, *Mete.* 1.1 338a20–25 (texts below). In both cases a distinction is made between the subjects covered in the *Physics*, which deal with concepts such as cause, motion, time and so on (all found in A's Book I), and the bodily objects of the physical world, dealt with in a series of treatises starting with *De Caelo*. There are, however, no verbal resemblances with A.<sup>48</sup> In his brief sketch entitled Τὰ μετὰ τὰ φυσικά, Theophrastus is very much concerned about the connection between first principles and the study of nature (cf. 4a1–17), but there first principles come after, not before.<sup>49</sup> More to the point is Diogenes Laertius' introductory section on the φυσικὸς λόγος at 7.132 (text below). The diaeresis between an eidetic (εἰδικῶς) and a generic (γενικῶς) list of topics shows some resemblance to the difference between the contents of A's Books I and II. See further the extended discussion in Part I sect. 8.

Moving to the Platonist tradition, we observe that rather general parallels to the present passage can be found in the Platonist tradi-

<sup>45</sup> Sect. 2 text at nn. 32–33.

<sup>46</sup> On this see the discussion in Part I sect. 2.

<sup>47</sup> Cf. Runia (1997). It is taken by Proclus in his Commentary to be in part an exposition of the causes of the cosmos; cf. 1.3.3–16, 4.26–29, 237.4–16, 274.21–31. Note that Plato returns to the ἀρχαί at 47e.

<sup>48</sup> Though τῶν φύσει συνεστώτων at 268a4 amounts to the same as τῶν ἀποτελεσμάτων.

<sup>49</sup> He will also have dealt with first principles either in his *Physics* or *Φυσικαὶ δόξαι*, but we have no idea how he organized his broader treatment, let alone whether he had an explicit transition from *principia* to *realia*. Cf. Steinmetz (1964) 334–351, who persuasively argues (against Usener and Diels) that the Theophrastean fragments on the ἀρχαί had their origin in his Ἱστορία περὶ φύσεως, the title he gave his chief work on natural philosophy.

tion based on the *Timaeus*. A comparable structure is found in Timaeus Locrus' Pythagoreanizing epitome of the *Timaeus*, where the αἰτίαι and ἀρχαί are presented in §§ 1–6 and § 7 makes the transition to the οὐρανός. In the handbook of Alcinous there is a movement from the πρῶτα to the γένεσις of the cosmos, and then to the γένεσις and φύσις of human beings (text below). This is of course primarily based on Plato, *Ti.* 27a. The same structure also lurks behind Philo's exegesis of the Mosaic cosmogony and the distinction between day one and the remaining five days of creation.<sup>50</sup> Another interesting text is the Pythagorean doxography of Alexander Polyhistor at D.L. 8.25. Festugière compares the general structure of the doxography with Aëtius' five books.<sup>51</sup> The move from principles to elements and cosmos in § 25, however, follows a standard Academic–Pythagorean derivation scheme (note the sequence of ἐκ-phrases) and bears no resemblance to the sentence here.

Finally we draw attention to the way that Achilles begins his compendium:

*Isagoge* 1, 27.1–4 Maass ~ 5.1–4 Di Maria

“Μισῶ μὲν ὅστις τὰ φανῇ περισκοπῶν—” φησὶν ὁ Σοφοκλῆς. καὶ ὁ κωμικὸς Ἀριστοφάνης “ὅς τὰ φανῇ μερμνᾷ, τὰ δὲ χαμᾶθεν ἐσθίει” φησὶν. ἀλλ’ οἱ μὲν ἀφανῇ, ἡμεῖς δὲ φαινόμενα, ἀλλ’ οὐκ ἀφανῇ ζητοῦμεν.

Leaving aside the literary flourishes, it is clear that the title of Aratus' poem has inspired the author to make a distinction (in the form of a diaphonia) between what is invisible and what is apparent to the senses which is not entirely dissimilar to A's transition. Although Ach has a chapter on the ἀρχή of the universe (§ 3), there is no room in his work for the extended treatment of principles and causes that we find in A. It may be speculated that his approach here has been influenced by what he found in the earlier tradition of the *Placita*.<sup>52</sup>

<sup>50</sup> Cf. Runia (1986) 87–88.

<sup>51</sup> Festugière (1945) 5–10 = (1971) 375–380, who takes over the Dielsian theory that this basic structure emanated from Theophrastus' *Physikai doxai* (sic).

<sup>52</sup> But not in A. The two works are 'cousin writings'; cf. Vol. I:305. Note that Ach § 2 uses the same formula as A at P 1.2 and that Ach § 4 Περί τῆς συστάσεως τῶν ὅλων has almost the same title as A at P 1.4 Πῶς συνέστηκεν ὁ κόσμος. But at § 5 Ach commences with the nature of the heaven. See further the comments in Part I sect. 10.

## RECONSTRUCTED TEXT

τετελεκώς τοίνυν τὸν περὶ ἀρχῶν καὶ στοιχείων καὶ τῶν συνεδρευνόντων αὐτοῖς λόγον τρέψομαι πρὸς τὸν ἐπὶ<sup>1</sup> τῶν ἀποτελεσμάτων, ἀπὸ τοῦ περιεκτικωτάτου πάντων ἐνστησάμενος.

<sup>1</sup> P, περὶ conj. corrector ms. Vossiani, prob. Diels non recte

[Preface]

Having thus completed my account of the principles and elements and what is closely associated with them, I shall turn to the account concerned with the products, starting with the most comprehensive of all things.

## DIALECTICAL-DOXOGRAPHIC PARALLELS

**Plato** *Ti.* 27a, 27d–29d, 47e. **Aristotle** *Cael.* 1.1 268a1–6, ἡ περὶ φύσεως ἐπιστήμη σχεδὸν ἢ πλείστη φαίνεται περὶ τε σώματα καὶ μεγέθη καὶ τὰ τούτων οὕσα πάθη καὶ τὰς κινήσεις, ἔτι δὲ περὶ τὰς ἀρχάς, ὅσαι τῆς τοιαύτης οὐσίας εἰσὶν· τῶν γὰρ φύσει συνεστώτων τὰ μὲν ἐστὶ σώματα καὶ μεγέθη, τὰ δ' ἔχει σῶμα καὶ μέγεθος, τὰ δ' ἀρχαὶ τῶν ἐχόντων εἰσὶν; cf. 1.2 268b11–14. *Mete.* 1.1 338a20–25, περὶ μὲν οὖν τῶν πρώτων αἰτίων τῆς φύσεως καὶ περὶ πάσης κινήσεως φυσικῆς, ἔτι δὲ περὶ τῶν κατὰ τὴν ἄνω φορὰν διακεκοσμημένων ἄστρον καὶ περὶ τῶν στοιχείων τῶν σωματικῶν ... εἴρηται πρότερον. **Stoics** *ap.* D.L. 7.132, τὸν δὲ φυσικὸν λόγον διαιροῦσιν εἷς τε τὸν περὶ σωμάτων τρόπον καὶ περὶ ἀρχῶν καὶ στοιχείων καὶ θεῶν καὶ περάτων καὶ τόπου καὶ κενοῦ. καὶ οὕτω μὲν εἰδικῶς, γενικῶς δ' εἰς τρεῖς τρόπους, τὸν τε περὶ κόσμου καὶ τὸν περὶ τῶν στοιχείων καὶ τρίτον τὸν αἰτιολογικόν... **Alexander Polyhistor** *ap.* D.L. 8.24–25. **Timaeus Locrus** §§1–7, esp. §7 πρὶν ὧν ὥρανὸν λόγῳ γενέσθαι ἥστην ἰδέα τε καὶ ὕλα καὶ ὁ θεός ... **Alcinous** *Did.* 8 19.5–9 Whittaker, μετὰ δὲ ταῦτα ἐπομένως περὶ τῶν ἀρχῶν τε καὶ τῶν θεολογικῶν λέγωμεν θεωρημάτων, ἄνωθεν ἀπὸ τῶν πρώτων ἀρχόμενοι καὶ ἀπ' αὐτῶν κατιόντες καὶ ἐπισκοποῦντες τὴν τοῦ κόσμου γένεσιν, τελευτώντες δὲ εἰς ἀνθρώπων γένεσιν καὶ φύσιν.

## Aëtius *Placita* 2.1

### Περὶ κόσμου

#### WITNESSES

Ps.Plutarch 2.1, ps.Galen 44, Cyril *c. Iul.* 2.14, Qusṭā Ibn Lūqā 2.1  
Stobaeus 1.21.3ab, 6c, 1.22.3bcd  
Theodoret 4.15  
Cf. Achilles 5, 8

#### ANALYSIS

1. The first chapter of the book follows on directly from the Preface, where its subject is announced, though without actually using the term κόσμος itself. Considerable mention has of course been made of the cosmos in Book I, particularly in the first seven chapters, but also incidentally thereafter (e.g. at P 1.21.2, 22.1 on time, P 1.25.1 on necessity etc.). It is only, however, when he reaches Book II that A begins to deal with the cosmos as physical object systematically. But there is notable overlap with the contents of Book I, particularly the chapters 4 Πῶς συνέστηκεν ὁ κόσμος (note the term *kosmos* is used in the chapter title), 5 Εἰ ἐν τὸ πᾶν, and to a lesser degree in the chapters 3 on first principles and 7 on theology.<sup>53</sup> On the overlap between A 1.5 and the present chapter see further below sect. 7.

2. The text as preserved by ps.Plutarch has seven lemmata as follows:

#### α'. Περὶ κόσμου

- |        |  |
|--------|--|
| P2.1.1 | Πυθαγόρας πρῶτος ὠνόμασε τὴν τῶν ὅλων περιοχὴν κόσμον ἐκ τῆς ἐν αὐτῷ τάξεως.                                     |
| P2.1.2 | Θαλῆς καὶ οἱ ἀπ' αὐτοῦ ἓνα τὸν κόσμον.   |
| P2.1.3 | Δημόκριτος καὶ Ἐπίκουρος καὶ ὁ τοῦτου καθηγητὴς Μητροδόωρος ἀπείρους κόσμους ἐν τῇ ἀπείρῳ κατὰ πᾶσαν περιστάσιν. |
| P2.1.4 | Ἐμπεδοκλῆς τὸν τοῦ ἡλίου περιδρόμον εἶναι περιγραφὴν τοῦ κόσμου καὶ τοῦ πέρατος αὐτοῦ.                           |
| P2.1.5 | Σέλενκος ἄπειρον τὸν κόσμον.   |
| P2.1.6 | Διογένης τὸ μὲν πᾶν ἄπειρον, τὸν δὲ κόσμον πεπεράνθαι.   |

<sup>53</sup> On these chapters see further Part I sect. 2 & 5.

- P2.1.7 οἱ Στωικοὶ διαφέρειν τὸ πᾶν καὶ τὸ ὅλον· πᾶν μὲν γὰρ εἶναι τὸ σὺν  
κενῷ ἄπειρον, ὅλον δὲ χωρὶς τοῦ κενοῦ τὸν κόσμον· ὥστε οὐ τὸ  
αὐτὸ εἶναι τὸ ὅλον καὶ τὸν κόσμον.

The chapter is not cited by Eusebius for the reasons given in our analysis of the Preface. His fellow Bishop Cyril, however, cites it verbatim in its entirety. His text gives two interesting and persuasive variants where he agrees with S and G against the mss. tradition of P: (1) τοῦ πέρατος τοῦ κόσμου, cf. P4 τοῦ κόσμου καὶ τοῦ πέρατος αὐτοῦ; (2) τὸ σὺν τῷ κενῷ τῷ ἄπειρῳ, cf. P7 τὸ σὺν κενῷ ἄπειρον. Qus̄ā appears to agree in the former case with Cyril, in the latter with P. A third variant in Cyril is that his text does not have οὐ in the final clause. S leaves out this clause and in G it is defective. Q, however, agrees with Cyril. His text must be correct, as the meaning plainly indicates, and as was seen by earlier scholars.<sup>54</sup> G takes over 5 of the 7 lemmata. His most striking change is to alter the name-label Metrodorus in P3 to Leucippus. We will return to the problems posed by this name-label and by the parallel chapter at P 1.5, which also cites Metrodorus, further below in sect. 7.

3. In Stobaeus the chapter is divided between two chapters as follows:

- 1.21 title Περὶ κόσμου καὶ εἰ ἔμφυχος καὶ προνοία διοικούμενος καὶ ποῦ  
ἔχει τὸ ἡγεμονικὸν καὶ πόθεν τρέφεται
- 1.21.3a  
S1 Ἐμπεδοκλῆς τὸν τοῦ ἡλίου περιδρομον εἶναι περιγραφὴν τοῦ  
πέρατος τοῦ κόσμου.
- S2 Σέλευκος ὁ Ἐρυθραῖος καὶ Ἡρακλείδης ὁ Ποντικὸς ἄπειρον τὸν  
κόσμον.
- S3 Διογένης καὶ Μέλισσος τὸ μὲν πᾶν ἄπειρον, τὸν δὲ κόσμον  
πεπεράνθαι.
- 1.21.3b  
S4 οἱ Στωικοὶ διαφέρειν τὸ πᾶν καὶ τὸ ὅλον· πᾶν μὲν γὰρ εἶναι σὺν τῷ  
κενῷ τῷ ἄπειρῳ, ὅλον δὲ χωρὶς τοῦ κενοῦ τὸν κόσμον.
- 1.21.6c  
S5 Πυθαγόρας  
—ὃς καὶ πρῶτος ὠνόμασε τὴν τῶν ὅλων περιοχὴν κόσμον ἐκ τῆς  
ἐν αὐτῷ τάξεως.
- 1.22 title Περὶ τάξεως τοῦ κόσμου<sup>55</sup>
- 1.22.3b

<sup>54</sup> See the apparatus of the reconstructed text below.

<sup>55</sup> We do not follow Wachsmuth in adding the sub-title from 198.18. See below n. 57.

- S6      Θαλῆς, Πυθαγόρας, Ἐμπεδοκλῆς, Ἐκφραντος, Παρμενίδης,  
Μέλισσος, Ἡράκλειτος, Ἀναξαγόρας, Πλάτων, Ἀριστοτέλης,  
Ζήνων ἓνα τὸν κόσμον.
- S7      Ἀναξίμανδρος, Ἀναξίμενης, Ἀρχέλαος, Ξενοφάνης, Διογένης,  
Λεύκιππος, Δημόκριτος, Ἐπίκουρος ἀπείρους κόσμους ἐν τῷ  
ἀπείρῳ κατὰ πᾶσαν περιαγωγὴν.
- 1.22.3C
- S8      τῶν ἀπείρους ἀποφνημαμένων τοὺς κόσμους Ἀναξίμανδρος τὸ ἴσον  
αὐτοὺς ἀπέχειν ἀλλήλων,
- S9      Ἐπίκουρος ἄνισον εἶναι τὸ μεταξὺ τῶν κόσμων διάστημα.

In his chapter 21 S gathers together material from P 2.1–6 (the composite title refers to the titles of P 2.1, 3, 5a and 5).<sup>56</sup> After quoting some material from Plato's *Timaeus* (30a2–c1, 33c6–d1), he cites the equivalent of P4–7 in a block, followed later in the chapter by P1 in a cluster of four doxai of Pythagoras. But he has noticed that there is more material on the unicity of the cosmos in A's Book I, as preserved in P 1.5 with the title Εἰ ἓν τὸ πᾶν. He thus reserves the equivalent of P2–3 for his next chapter 22, which has the same title as P 2.7, Περὶ τάξεως τοῦ κόσμου. In this chapter he creates a special sub-section with the sub-title εἰ ἓν τὸ πᾶν, i.e. the same title as at P 1.5.<sup>57</sup> To these lemmata he then adds two more not found in P, i.e. S8–9.

It is apparent, therefore, that S has wholly ignored the sequence of the chapter such as we found it in P. He does, however, furnish a lot of information deleted by P:

- (a) The record of name-labels is much fuller. It emerges that in S6 Θαλῆς καὶ οἱ ἄπ' αὐτοῦ in P is an abbreviation for a list of some eleven names. In the case of the infinitists (S7), six Presocratics, including Leucippus, are added to the three atomists that make up the list in P, but the name-label of Metrodorus is omitted, no doubt in order to avoid repetition with the lemma from P 1.5 cited a few lines earlier (1.22.3a). For Seleucus (S2) a place of origin is given, and he is given the company of Heraclides, while Diogenes (S3) is joined by Melissus.
- (b) As noted above, two new lemmata are added, namely a subdivision of the infinitists, represented by Anaximander (S8) and Epicurus (S9). This subdivision runs parallel to the one given for the unicists in P2–3 (= S6–7).

<sup>56</sup> The words in S's title reveal a chapter missing in P; cf. below on ch. 5a.

<sup>57</sup> This is one more piece of evidence that S planned his excerpts; he must have known when compiling 1.21 what he intended to do in 1.22. Wachsmuth gratuitously includes the sub-title Εἰ ἓν τὸ πᾶν as part of the title (cf. the title of 1.26, where he again introduces material from inside the chapter). It is clear that S sometimes introduces sub-titles, which he does not include in the title itself.

- (c) As often in S, readings differ from what we find in P (two have already been mentioned in sect. 2 above). An interesting example is that in S7 the infinite *kosmoi* are located ἐν τῷ ἀπείρῳ κατὰ πᾶσαν περιαγωγὴν, i.e. scattered throughout the entire circumference (of the universe), whereas in P3 they are located ἐν τῷ ἀπείρῳ κατὰ πᾶσαν περίστασιν, i.e. scattered throughout the entire surrounding space. Both readings are possible, but the latter is clearly preferable because there is no need to assume that the entire universe would have a single unified revolution.
- (d) As often in S, a privileged position is given to Plato. His doxa, which is listed among the unicists in S6, is repeated at 1.22.3d with the addition of the characteristic verb ἀπεφίνατο and is further confirmed by a quote explicitly described as taken from the *Timaeus* (31a2–b3). Both are clear cases of S's own intervention.<sup>58</sup>

4. The evidence furnished by Theodoret is as follows:

*GAC* 4.15, 104.8–15

οὐ μόνον δὲ ἐν τούτοις διαφωνία γε πλείστη, ἀλλὰ καὶ τοῖς ἄλλοις ἐχρήσαντο.

T1 καὶ γὰρ δὴ τὸν κόσμον Θαλῆς μὲν καὶ Πυθαγόρας καὶ Ἀναξαγόρας καὶ Παρμενίδης καὶ Μέλισσος καὶ Ἡράκλειτος καὶ Πλάτων καὶ Ἀριστοτέλης καὶ Ζήνων ἓνα εἶναι ξυνωμολόγησαν·

T2 Ἀναξίμανδρος δὲ καὶ Ἀναξίμενης καὶ Ἀρχέλαος καὶ Ξενοφάνης καὶ Διογένης καὶ Λεύκιππος καὶ Δημόκριτος καὶ Ἐπίκουρος πολλοὺς εἶναι καὶ ἀπείρους ἐδόξασαν.

He thus records only the equivalent of P2–3, i.e. what he regards as the main διαφωνία between unicists and infinitists. Further divisions and distinctions supplied in A's chapter are ignored. With his lengthy lists of names, however, he stands much closer to the text in S6–7, and so confirms that P has abbreviated these lemmata rather drastically. The names of the eight infinitists are the same in both S and T (on the problem of Metrodorus see below sect. 7). But in the case of the names of the unicists there are slight discrepancies: (i) T omits the names Empedocles and Ecphantus recorded by S; (ii) the order in T is slightly different, Anaxagoras being placed after Pythagoras instead of in between Heraclitus and Plato. No other reason need be suggested for these alterations than T's loose form of paraphrasing. The long list of names is retained in order to emphasize the extent of the disagreement. One further interesting change is that he formulates the

<sup>58</sup> Cf. Vol. I:232, 266. As noted on 266, we might have expected S to delete the name of Plato in S6.

infinitist view as πολλοὺς καὶ ἄπειρους (κόσμους). It should not be concluded that he allows for a third, pluralist position, for then ἡ would have been expected rather than καί. T may have drawn his formulation from the well-known Platonic text *Ti.* 31a2–3, which was also independently cited by S (see the text in the dialectical-doxographical parallels below).<sup>59</sup>

5. Achilles offers three brief texts with material not taken directly from A, but revealing clear parallels:

*Isagoge* 5, 36.8–12 Maass ~ 15.10–13 Di Maria

τὸ δὲ πᾶν κόσμον Πυθαγόρας ἐκάλεσεν ἐκ τῆς διακοσμήσεως, οὐδεὶς δὲ πρὸ αὐτοῦ. τὸ δὲ πᾶν τοῦ ὅλου παρὰ τοῖς Στωϊκοῖς διαφέρει· ὅλον μὲν γὰρ λέγουσι τὸν κόσμον, πᾶν δὲ <τὸ> μετὰ τοῦ κενοῦ. τηρητέον, ὅτι οὐδαμοῦ δι' ὅλου κόσμος οὕτως ὠνόμασται.

*Isagoge* 5, 37.5–6 Maass ~ 16.8–9 Di Maria

Ἐπίκουρος δὲ πολλοὺς κόσμους ὑποτίθεται καὶ ὁ διδάσκαλος αὐτοῦ Μητρόδωρος.

*Isagoge* 8, 38.11–12 Maass ~ 17.21–22 Di Maria

οἱ μὲν εἶναι τι ἐκτός φασιν, ὥσπερ καὶ Ἐπίκουρος (ὃς καὶ ἀπείρους κόσμους ὑποτίθεται ἐν ἀπείρῳ τῷ κενῷ), οἱ δὲ Στωϊκοὶ ...

The first text gives the contents of P<sub>1</sub> and P<sub>7</sub>, but the verbal parallels are limited. The second text is of interest because, just like P<sub>3</sub>, it describes Metrodorus as Epicurus' teacher, although the term used is διδάσκαλος rather than καθηγητής. Moreover it refers to πολλοί rather than ἄπειροι, i.e. partly reminiscent of T. The third text reverts to ἄπειροι κόσμοι. The expression ἐν ἀπείρῳ τῷ κενῷ reminds us of the similar expression in S<sub>4</sub> σὺν τῷ κενῷ τῷ ἀπείρῳ, for which some parallels were found in the tradition of P (Cyril and G).

6. The witnesses to the tradition of A thus furnish us with nine lemmata, all of which are found in S, with two less in P. In order to reconstruct the chapter it will be important to determine—if possible—their order in the original work. Taking P as our starting point (because he usually, but not always, retains the order of A, cf. Vol. I:187–189), the two sources are related to each other as follows:

<sup>59</sup> And note also the passages in Proclus which refer to a controversy as to whether Plato distinguishes two or three positions in this text (texts below).



P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>			P <sub>4</sub>	P <sub>5</sub>	P <sub>6</sub>	P <sub>7</sub>
S <sub>5</sub>	S <sub>6</sub>	S <sub>7</sub>	S <sub>8</sub>	S <sub>9</sub>	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>

We note the correspondence of P<sub>4–7</sub> and S<sub>1–4</sub>, a clear case of S operating with blocks of lemmata, which is a typical feature of his compilatory method (cf. Vol. I:266). S<sub>6–9</sub> also forms a block of four consecutive doxai, which encourages us to conclude that S<sub>8</sub> and S<sub>9</sub> would have followed P<sub>3</sub> in A. Diels, however, places them at the end of the chapter for reasons that are not explained. Given S's usual methods, this move seems rather doubtful, but a final decision can only be based on a detailed analysis of the entire chapter.

7. A first problem is posed by the apparent overlap of the present chapter with 1.5 Εἰ ἐν τὸ πᾶν (S very naturally links them together in his 1.22).<sup>60</sup> The title of the earlier chapter refers to τὸ πᾶν, yet mentions ὁ κόσμος in every single lemma. Our present chapter concerns the cosmos, yet introduces a distinction between it and the universe in the last two lemmata as found in P. The following incompatibilities between the chapters are to be noted: (i) the view of the Stoa at P 1.5.1 differs from P 2.1.7, and is erroneous (this is sensed by S, who deletes καί before τὸ σωματικόν at 1.22.3a); (ii) Empedocles' distinction at P 1.5.2 is not found in 2.1 (though it is vaguely similar to P 2.1.6–7); (iii) arguments—attributed to Plato and Metrodorus—are given for the two main positions in 1.5, whereas 2.1 is purely assertive. Though both chapters use the method of the *Placita*, it is likely that they represent separate strands of the tradition. In 2.1 the subject is approached from a purely cosmological perspective; in 1.5 there is some reference to *principia* (e.g. ὕλη, παράδειγμα, αἷτια).<sup>61</sup> Particularly noteworthy is that the author argues against one of the doxai, i.e. Plato; this seldom occurs in A, mostly in the early chapters (cf. P 1.3.2–3, 1.7.1, 4.19.3).<sup>62</sup>

<sup>60</sup> But following his frequent practice he drops the Platonic lemma and substitutes the relevant passage from the *Timaeus* at 1.22.3d. The order of the first two doxai is also reversed when compared with P. Here it is difficult to determine who did the reversal, P or S.

<sup>61</sup> Also the doxai on whether the cosmos is limited or unlimited at T 4.5 (Xenophanes), 4.7 (Melissus) come from a different tradition, in which the relation to the ἀρχαί is central. See further Part I sect. 7.

<sup>62</sup> On these passages see Part I sect. 6 text at n. 149 and also the remarks at Mansfeld (1992a) 109–111.

A tricky related problem is posed by the name-label καὶ ὁ τούτου καθηγητῆς Μητροδόωρος in P3. The phrase is not found in T, who leaves him out altogether in his list of infinitists (but does link him with Epicurus in 4.9 and 4.13). S also does not include Metrodorus in his list of infinitists in S7, but does read Μητροδόωρος ὁ καθηγητῆς Ἐπικούρου at 1.22.3a, the equivalent of P 1.5.4 (where the phrase is not found). Diels *DG* 62 argued that P in the present chapter had taken it from 1.5.4. This is not very logical: why should the epitomator go to the trouble of leaving it out first and then adding it later? It is also not very likely that S has moved it from the later to the earlier lemma, especially since he has placed the two lemmata virtually next to each other in 1.22.3a and 3b. On the other hand the weight of S and T is opposed to P. Stylistic arguments also favour non-inclusion, since the placement of Metrodorus and his eponym disrupts the chronology and is an exception to the bald list of names. An appeal might be made to the evidence of Achilles, who records a parallel description (διδάσκαλος instead of καθηγητῆς). This evidence was ignored by Diels because he thought it was derived from P. It cannot give us decisive help because Achilles and A are at best cousin writings (cf. Vol. I:305). It is possible that Achilles coalesced the equivalents of 1.5 and 2.1 that were present in his *Vorlage*. The decision is difficult, but all things considered, it is safest to retain P's evidence in the reconstruction. It remains puzzling that T has left Metrodorus out if he was present in A. Perhaps he thought three atomists were enough, and from Clement *Str.* 1.64.4 he would have known that the description was factually incorrect. G knows this too, and emends to Δημόκριτος καὶ Ἐπίκουρος καὶ ὁ τούτου καθηγητῆς Λεύκιππος (where ἐκείνου would have been smarter).<sup>63</sup>

8. As chapter commenced, we may safely conclude, with a lemma stating that Pythagoras was first to use the term κόσμος for the totality of physical reality. The πρώτος εὐρετής motif, frequently used in the Greek *Kultursentstehungslehre* and also in accounts of the origin of Greek philosophy, is easily recognized.<sup>64</sup> It will recur on a number of occasions

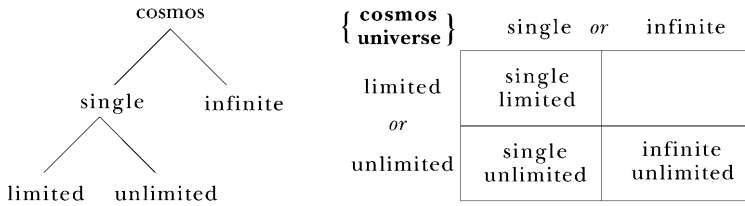
<sup>63</sup> In Diels' apparatus it looks like Cyril has emended to μαθητής, but his recent editors Burgière—Évieux inform us that the mss. do read καθηγητῆς, i.e. the old reading must be a later editorial emendation referring to Metrodorus of Lampsacus (who occurs in the *Placita* only at G §4, 601.17 Diels).

<sup>64</sup> On this motif see Part I sect. 7 at n. 199. This doxa is also found at D.L. 8.48; cf. the discussion at Burkert (1972) 77.

in Book II.<sup>65</sup> At the same time it neatly serves to introduce the subject of the chapter (and the entire book), so in a sense parallels the definitions of terms given in Book I (note esp. P 1.9–12).

Before analyzing the remaining doxai, it will be useful first to look at the dialectical-doxographical parallels listed below. The question of whether there is a single cosmos or a plurality of *kosmoi* is one of the very oldest in Greek philosophy. In our sources we find it explicitly posed for the first time in Plato's *Timaeus*, but it is hard to imagine that it had not been formulated earlier.<sup>66</sup> After Plato countless authors state the question in dialectical terms. But of greatest interest for the appreciation of A's chapter are the parallels in Philo, Galen and Lucian, for these prove that in this chapter A is actually combining two related but separate questions or *θέσεις*: (i) εἰ πολλοὶ κόσμοι ἢ εἷς; (ii) εἰ τὸ πᾶν πεπερασμένον ἢ ἄπειρον (texts given in the list of parallels at the end of the chapter; see also further below sect. 12), i.e. the question of the finite or infinite extent of the cosmos is linked to that of its unicity or plurality. The connection of the two questions was already apparent to Aristotle in his discussion in the *De Caelo*, although he did not formulate the questions in a way that the later tradition could utilize.

The systematic structure of the chapter is, therefore, in the first instance determined by the interaction of these two questions. They can be presented either in a diaeretic structure, or by means of a grid:



<sup>65</sup> At 12.2\* (Pythagoras), 24.1\* (Thales), 28.5\*. Other examples in A at P 1.3.7 (Pythagoras), 1.3 at S 1.10.16a (Ecphantus), P 3.11.4 (Parmenides), P 4.2.1 (Thales). The same example as here in Achilles 5 (cited above in sect. 5); other exx. at Ach 31 (Parmenides), T 4.9 (Democritus) etc.

<sup>66</sup> Note that Xenophon comes very close to formulating the question when describing Socrates' lack of interest in physical questions at *Mem.* 1.1.14: τῶν τε περὶ τῆς τῶν πάντων φύσεως μεριμνώντων τοῖς μὲν δοκεῖν ἐν μόνον τὸ ὄν εἶναι, τοῖς δ' ἄπειρα τὸ πληθός. The formulation combines the contrast between unicity and infinity in relation to 'all things', not strictly speaking the universe. Similarly Gorgias asks the question of being in fr. B3 DK (text below). On these texts see Mansfeld (1986b) 36–38 and the discussion at Mansfeld (1992a) 84 and n. 88.

The former schema has the advantage of representing the kind of philosophical method underlying the analysis. It recalls the analysis of philosophical first principles undertaken by Aristotle and Theophrastus and further developed by Simplicius.<sup>67</sup> The second schema has the advantage of showing how one of the hypothetically possible positions, that there are unlimited *kosmoi* in a limited universe, is not represented because it is absurd.<sup>68</sup>

9. After the first introductory lemma, the rest of the chapter explores how one can speak about the cosmos as ordered whole. The remaining eight doxai can be grouped in four pairs, of which at least three represent dichotomous (i.e. type A) diaereses.<sup>69</sup>

(a) The first pair (§§ 2–3), as indicated by P (P2–3, = S6–7),<sup>70</sup> introduces the basic division between unicists and infinitists, also found in numerous doxographical parallels. A third possible position, that there is a multiple but finite number of *kosmoi*, is not included (*pace* T and Ach).<sup>71</sup> For both doxai A gives long lists of name-labels (eleven unicists, nine infinitists). Such lengthy lists are infrequently used by A to emphasize widely held points of view (cf. 2.4.7\*, seven names for the destructibility of the cosmos; 2.11.4\*, four names for the fiery nature of the heaven, etc.). The two lists are patently in a rough kind of chronological order and some groupings can be made (e.g. the mainstream teleological cosmologists Anaxagoras to Zeno in the former, the atomist tradition in the latter), but it would be unwise to press the details.<sup>72</sup>

(b) There now follows (§§ 4–5) a division among the infinitists as to whether the *kosmoi* are or are not equidistant from each other. Elsewhere A shows an interest in such questions involving considerations of symmetry and stereometrical location, e.g. 2.15\*, where a distinction is

<sup>67</sup> Cf. Arist. *Ph.* 2.1, Thphr. *Phys. dox.* 1–5, 8–9 Diels, Simp. in *Ph.* 22.22–28.31 Diels, and the detailed analysis at Mansfeld (1989a) 138–148.

<sup>68</sup> Cf. our analysis below of ch. 4, where a similar schema occurs, and one of the four possible positions is also unrepresented.

<sup>69</sup> For the different kinds of diaeresis used in our analysis of Aëtius see the Introduction to Part II.

<sup>70</sup> For the presumed order of the lemmata see above sect. 6.

<sup>71</sup> Plato toys with the idea of five *kosmoi* at *Ti.* 55c–d; cf. Plu. *De def. orac.* 422B–D on Petron of Himera, who postulated 183 *kosmoi* arranged in a triangle; the three possibilities are given by Philo in *Opif.* 171 and Dionysius in Eusebius *PE* 14.23.1 (texts cited below).

<sup>72</sup> Note for example that both the Milesians and the Eleatics (if Xenophanes is included) are split up between the two lists.

made between the placement of the stars in 2 and 3 dimensions. This pair of doxai flows on well from the previous infinitist view (the two name-labels both occur in the list in the previous doxa), and are better placed here than at the end of the chapter as postulated by Diels (see above sect. 6).<sup>73</sup> However, the manner in which A appears to use an initial phrase in the genitive to pick up the position in the earlier doxa appears to be unique in the *Placita*,<sup>74</sup> and it is not impossible that it was added by our only witness S, i.e. that the sentence originally read Ἀναξιμανδρος τὸ ἴσον τοὺς ἀπείρους κόσμους ἀπέχειν ἀλλήλων, Ἐπίκουρος ἄνισον τὸ μεταξὺ τῶν κόσμων διάστημα. But this involves a greater degree of intervention than S usually shows.

(c) The division of the next pair (§§6–7) between a limited and an unlimited single cosmos follows on in a chiastic structure from the earlier doxa attributed to the large group of unicists. The name-label Empedocles in the first doxa is also found in the list of unicists. The names of Seleucus and Heraclides in the second doxa are new.<sup>75</sup>

(d) The remaining two lemmata (§§8–9) introduce a new element, for they speak about the universe (τὸ πᾶν) and the whole (τὸ ὅλον), terms which have not occurred so far in this chapter (the former does occur in P 1.5). They clearly belong together, since they turn on the distinction between the universe and the cosmos. The role of the two doxai appears to be to introduce terminological precision. There does not seem to be a strong opposition between them and they do not form a diaeresis. The second doxa, by introducing the element of the void, offers extra detail which clarifies the basic distinction.<sup>76</sup> A will return to this topic in 2.9 below.<sup>77</sup> In the case of both doxai the earlier distinction between limited and unlimited (implicit in §§2–3, explicit in §§6–7) is clarified.

<sup>73</sup> It could be argued that the two doxai might be better placed after §§6–7 in our reconstruction. Then the order of §§4–5 and §§6–7 would correspond to the initial diaeresis. But the position of the lemmata in S (i.e. in a block) militate against this. A chiastic structure is no less elegant.

<sup>74</sup> Compare texts such as 2.15.5\*, A at P 3.1.2 and P 3.2.1, where the initial genitive plural distinguishes two groups of astronomers and Pythagoreans respectively. But here the genitive picks up an earlier position.

<sup>75</sup> Seleucus occurs elsewhere in the *Placita* only at P 3.17.5, where he is given the epithet ὁ μαθηματικός. Heraclides occurs some 9 times, including two further appearances in Book II (13.15\*, 25.13\*).

<sup>76</sup> The use of the verb διαφέρειν to indicate the terminological distinction is common in the *Placita*; cf. P 1.2, 1.20, 1.29.2, 4.12, S 1.5.15, etc.

<sup>77</sup> It has in fact already been introduced in P 1.18 Περί κενοῦ. See further below on 2.9.

10. At least two interpretative problems remain before a final view can be reached on the systematic structure of the chapter.

- (i) The doxa attributed to Empedocles is somewhat surprising.<sup>78</sup> One would expect the doxographer to introduce the standard view that the sphere of the fixed stars marks the limit of the single cosmos. The doxa appears to constitute one of those exotic Presocratic views to which A is very partial. We would argue that it primarily represents a position of systematic importance, namely the imposition of a physical limit on the cosmos. This is made clear by the contrasting lemma which follows it. The name-label is subordinate to the systematic position which it illustrates. In the parallel chapter P 1.5.4 Empedocles is credited with the view that the cosmos is single but not equivalent to τὸ πᾶν, because outside it there is unordered matter.
- (ii) A more difficult problem is furnished by the conjoined name-labels Diogenes and Melissus in the doxa S2 (cf. P6, but S adds the name of Melissus). The problem is that Diogenes occurs in the list of infinitists (S6, cf. P2), Melissus in the groups of unicists (S7, cf. P3).<sup>79</sup> It is in effect a less specific version of the view attributed to Empedocles in P 1.5.2. This doxa appears to combine the two main groups. Two solutions have been proposed. The former is by Zeller, who notes the similarity with the next lemma and proposes that the Diogenes in P3 is the Presocratic, the Diogenes in P6 is the Stoic.<sup>80</sup> But this renders the lemma rather otiose, and in addition makes the coupling with the Presocratic Melissus rather odd. The second solution is that of Diels, who suggests that in both texts Diogenes the Presocratic is meant; in this text κόσμος means 'unsere gestaltete Welt', i.e. in contrast to the ἄπειροι κόσμοι in the earlier infinitist doxa.<sup>81</sup> In favour of this solution is the fact that the bald name-label Diogenes in A usually refers to the Presocratic (at 2.32.9\* the Stoic is named as such).<sup>82</sup> We favour this solution, but do not see it as undermining the earlier distinction between a single cosmos and infinite *kosmoi*. Rather it introduces a new terminological aspect. The distinction between universe and cosmos can in fact be used by both groups. As already observed, the Stoa in the last lemma adds precision

<sup>78</sup> It is less strange if one recognizes, with Bollack (1965–1969) 3.273, that his sun is a reflection of the primal sun-fire on the cosmic vault. Cf. also 2.15.6\*, attributed to Anaximander-Metrodorus-Crates, where the sun is ἀνωτάτω πάντων τετάχθαι.

<sup>79</sup> Note that this is not a problem that would arise if we only had P, who does not mention either philosopher in the earlier lemmata.

<sup>80</sup> Zeller (1921–1923) 1.352 n. 7.

<sup>81</sup> *VS* 2.53; Laks (1983) 186 proceeds along similar lines and makes a suggestion as to how the Melissan doxa could have arisen.

<sup>82</sup> On the difficulties of identifying which Diogenes is meant in the *Placita* see Tieleman (1991) 106–107, who points out that Diels obscured the problem; see also Laks (1983) 233–235.

to the previous position, since in their case it is apparent that there is only a single cosmos with an infinite void.<sup>83</sup>

11. The structure of this chapter is more than usually complex, we can see now, because it combines two methods of working with doxai. It is clear that the three diaereses play a central role. The linkage between them is the most important factor in organizing the systematics of the chapter. The final pair of doxai are best seen not as representing a new diaeresis, but as introducing further terminological distinctions which allow a more precise approach to the subject.

At the same time the doxographer appears to link the lemmata so that they move in a particular direction:<sup>84</sup>

§1 sets the scene by introducing the concept of cosmos.

§2 develops this in terms of a single cosmos.

§3 introduces the alternative of infinite *kosmoi*.

§§4–5 adds a further distinction in the views of the infinitists.

§6 by adding the aspect of limit qualifies the positions §§2–3.

§7 gives the opposed alternative to §6.

§8 introduces the notion of the universe, which allows a fresh distinction.

§9 develops the previous view into a more sophisticated position (the question of the status of the void will be taken up again in 2.9).

The Stoic position rounds off the chapter and brings it back to the notion of the cosmos with which it started. The chapter thus reveals a kind of progressive movement through its doxai, though this should not be exaggerated.<sup>85</sup> It will be indicated in the structural diagram below by means of an arrow.

12. As noted above in sect. 6, the question of whether there is a single cosmos or multiple *kosmoi* and whether it (or they) is (are) limited or infinite in its (their) spatial dimensions was a perennial topic in antiquity. As we can see in the list of dialectical/doxographical parallels below, the topics are specifically mentioned as *quaestiones generales* or

<sup>83</sup> But the position is made much clearer in the parallel text at S.E. *adv. Phys.* 1.332 (= *SVF* 2.524), which adds: καὶ διὰ τοῦτο τὸ μὲν ὅλον πεπερασμένον εἶναι, πεπερασται γὰρ ὁ κόσμος, τὸ δὲ πᾶν ἄπειρον, τοιοῦτον γὰρ τὸ ἐκτὸς τοῦ κόσμου κενόν.

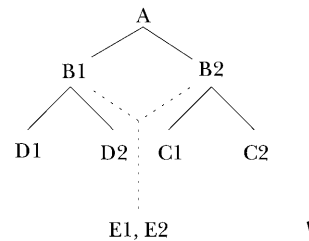
<sup>84</sup> We are indebted at this point to André Laks, who raised this issue in response to papers we read at Lille in March 1989. In a personal communication he suggested a ‘structuration téléologique ou vectorialisée’.

<sup>85</sup> We can agree with the notion of ‘vectorisation’, as introduced by Laks (see previous note), but to speak of teleology, as he also did, seems to us too strong.

θέσεις by A himself in P 1.1, by Quintilian and by Hermogenes. Moreover they are clearly used as a standard example of a contentious philosophical issue in doxographical contexts by authors such as Philo, Pliny the Elder, Lucian, Galen and others. In both the sceptical and the Judaeo-Christian traditions it is frequently used as a stock example of the disagreements of the philosophers (cf. Cicero, Aenesidemus, Philo, Augustine). It is important to note, however, that the systematic analysis developed in this chapter, though—as almost always in the *Placita*—lacking argumentation, is more complex than we meet elsewhere. The difficulties of interpretation lie precisely in the extreme concision of the doxai, which on occasion leads to ambiguities. It would be hard, however, to compress more information in a smaller space.

STRUCTURE (see above sect. 11)

- A Introductory  
naming of cosmos (= §1)
- B first diaeresis
  - 1 single cosmos (= §2)
  - 2 infinite *kosmoi* (= §3)
- C second diaeresis (starting from B2)
  - 1 infinite *kosmoi* equidistant (= §4)
  - 2 infinite *kosmoi* not equidistant (= §5)
- D third diaeresis (starting from B1)
  - 1 single cosmos limited (= §6)
  - 2 single cosmos unlimited (= §7)
- E further terminological distinctions
  - 1 universe unlimited, cosmos limited (= §8)
  - 2 universe unlimited, whole limited (= §9)



RECONSTRUCTED TEXT

α'. Περί κόσμου

- 1 Πυθαγόρας πρῶτος ὠνόμασε τὴν τῶν ὅλων περιοχὴν κόσμον ἐκ τῆς ἐν αὐτῷ τάξεως.
- 2 Θαλῆς Πυθαγόρας Ἐμπεδοκλῆς Ἐκφαντος Παρμενίδης Μέλισσος Ἡράκλειτος Ἀναξαγόρας Πλάτων Ἀριστοτέλης Ζήνων ἓνα τὸν κόσμον.
- 3 Ἀναξίμανδρος Ἀναξίμενης Ἀρχέλαος Ξενοφάνης Διογένης Λαέρτιος Δημόκριτος Ἐπίκουρος καὶ ὁ τοῦτου καθηγητῆς



- Μητροδόωρος<sup>1</sup> ἀπείρους κόσμους ἐν τῷ ἀπείρῳ κατὰ πᾶσαν  
περίστασιν<sup>2</sup>.
- 4 τῶν ἀπείρους ἀποφνημαμένων τοὺς κόσμους Ἀναξίμανδρος τὸ ἴσον  
αὐτοὺς ἀπέχειν ἀλλήλων,
- 5 Ἐπίκουρος ἄνισον εἶναι τὸ μεταξὺ τῶν κόσμων διάστημα.
- 6 Ἐμπεδοκλῆς τὸν τοῦ ἡλίου περιδρομον εἶναι περιγραφὴν τοῦ  
πέρατος τοῦ κόσμου<sup>3</sup>.
- 7 Σέλενκος ὁ Ἐρυθραῖος καὶ Ἡρακλείδης ὁ Ποντικός ἄπειρον τὸν  
κόσμον.
- 8 Διογένης καὶ Μέλισσος τὸ μὲν πᾶν ἄπειρον, τὸν δὲ κόσμον  
πεπεράνθαι.
- 9 οἱ Στωικοὶ διαφέρειν τὸ πᾶν καὶ τὸ ὅλον· πᾶν<sup>4</sup> μὲν γὰρ εἶναι σὺν τῷ  
κενῷ τῷ ἀπείρῳ<sup>5</sup>, ὅλον δὲ χωρὶς τοῦ κενοῦ τὸν κόσμον· ὥστε [οὐ]  
τὸ αὐτὸ εἶναι τὸ ὅλον καὶ τὸν κόσμον<sup>6</sup>.

1 ὁ τούτου καθηγητῆς Μητροδόωρος Cyril, τούτων Q, ὁ τούτων μαθητῆς P, ὁ  
τούτου καθηγητῆς Λεύκιππος G, verba omisit S

2 περιαγωγὴν S

3 τοῦ πέρατος τοῦ κόσμου SGCyrilQ Diels, τοῦ κόσμου καὶ τοῦ πέρατος αὐτοῦ P<sup>1</sup>,  
τοῦ κόσμου καὶ τοῦτο πέρας αὐτοῦ P<sup>2</sup>

4 ἅπαν Cyril, cf. G

5 σὺν τῷ κενῷ τῷ ἀπείρῳ SCyril Diels, τὸ σὺν κενῷ ἄπειρον PQ, σὺν τῷ κενῷ  
ἀπείρῳ G

6 ὥστε ... κόσμον om. P<sup>1</sup>S, secl. Diels; οὐ om. CyrilQ, conj. Vossius Reiske prob.  
Diels, ὥστε οὐ τὸ αὐτὸ εἶναι τὸ πᾶν conj. nonnulli (cf. Ach)

§ 1 14.21 DK; § 2a 11A13b DK; § 2b—; § 2c—; § 2d 51.3 DK; § 2e 28A36 DK; § 2f 30A9  
DK; § 2g 22A10 DK; § 2h 59A63 DK; § 2i—; § 2j T19 Gigon; § 2k SIV 1.97; § 3a 12A17  
DK; § 3b 13A10 DK; § 3c 60A13 DK; § 3d 21A37 DK; § 3e 64A10 DK; § 3f—; § 3g  
fr. 352 Luria; § 3h fr. 301 Usener; § 3i 70A7 DK; § 4 12A17 DK; § 5 fr. 301 Usener; § 6  
31A50 DK; § 7a—; § 7b fr. 112 Wehrli, 74 Schütrumpf; § 8a 64A10 DK; § 8b—; § 9 SIV  
2.522

# 1. On the cosmos

- 1 Pythagoras was the first to call the container of all things ‘cosmos’ on  
the basis of the order present in it.
- 2 Thales, Pythagoras, Empedocles, Ecphantus, Parmenides, Melissus,  
Heraclitus, Anaxagoras, Plato, Aristotle and Zeno (declare that) the  
cosmos is unique.
- 3 Anaximander, Anaximenes, Archelaus, Xenophanes, Diogenes,  
Leucippus, Democritus, Epicurus and his teacher Metrodorus (declare  
that there are) infinite *kosmoi* in the infinite space throughout the entire  
surrounding area.
- 4 Of those that declare there to be infinite *kosmoi* Anaximander (declares  
that) they are at an equal distance from each other,

- 5 whereas Epicurus (declares that) the distance between the *kosmoi* is unequal.
- 6 Empedocles (declares that) the revolution of the sun is the perimeter of the cosmos' limit.
- 7 Seleucus of the Red Sea and Heraclides from Pontus (declare that) the cosmos is infinite.
- 8 Diogenes and Melissus (declare that) the universe is infinite, but the cosmos is limited.
- 9 The Stoics (declare that) the universe and the whole differ, for the universe is the cosmos together with the infinite void, whereas the whole is the cosmos apart from the void; as a result the whole and the cosmos amount to the same.

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Gorgias** fr. 82B3(73) DK, καὶ ἄλλως, εἰ ἔστιν, ἦτοι ἔν ἐστιν ἢ πολλά· οὔτε δὲ ἔν ἐστιν οὔτε πολλά, ὥς παρασταθήσεται· οὐκ ἄρα ἔστι τὸ ὄν. εἰ γὰρ ἔν ἐστιν, ἦτοι ποσόν ἐστιν ἢ συνεχές ἐστιν ἢ μέγεθος ἐστιν ἢ σῶμά ἐστιν. **Plato** *Ti.* 31a2–3, πότερον ... ἓνα οὐρανὸν προσειρήκαμεν, ἢ πολλοὺς καὶ ἀπείρους λέγειν ἦν ὀρθότερον; 55c7–d2, πότερον ἀπείρους χρὴ κόσμους εἶναι ἢ πέρας ἔχοντας ..., πότερον δὲ ἓνα ἢ πέντε; cf. also **Xenophon** *Mem.* 1.1.14 cited above in n. 66. **Aristotle** *Ph.* 8.1 250b18, ἀλλ' ὅσοι μὲν ἀπείρους τε κόσμους εἶναι φασί ... ὅσοι δ' ἓνα (ἢ αἰεὶ) ἢ μὴ αἰεὶ; *Cael.* 1.1 268b11, περὶ μὲν οὖν τῆς τοῦ παντὸς φύσεως, εἴτ' ἀπειρὸς κατὰ τὸ μέγεθος εἴτε πεπεραμένη τὸν σύνολον ὄγκον, ὕστερον ἐπισκεπτέον; 1.5 271b2–3, καὶ πρῶτον πότερον ἔστι τι σῶμα ἀπειρον, ὥστερον οἱ πλείστοι τῶν ἀρχαίων φιλοσόφων ᾤθησαν, ἢ τοῦτ' ἐστὶν ἓν τι τῶν ἀδυνάτων; also 1.9 (ἀπορίαι but no doxography proper); note esp. 1.9 278a22, ἐκ μὲν οὖν τούτων ὑπολάβοι τις ἂν καὶ εἶναι καὶ ἐνδέχασθαι πλείους εἶναι οὐρανοὺς. **Divisiones Aristoteleae** 42 56.1 Mutschmann, φυσικὸν [πρόβλημα] δέ, οἷον εἷς κόσμος ἐστὶν ἢ πλείους ... **Epicurus** *ap.* D.L. 10.45, οὐ γὰρ κατανήλωνται αἱ τοιαῦται ἄτομοι ... οὐθ' εἰς ἓνα [κόσμον] οὐθ' εἰς πεπερασμένους ... ὥστε οὐδὲν τὸ ἐμποδοστατήσόν ἐστι πρὸς τὴν ἀπειρίαν τῶν κόσμων; cf. **Lucretius** 2.1048–1055. **Cicero** *Ac.* 2.125, cuique adsentiar deligam—quem potissimum? ... et cum in uno mundo ornatus hic tam sit mirabilis, innumerabilis supra infra, dextra sinistra, ante post, alios dissimiles, alios eiusdem modi mundos esse? *Div.* 2.11, quae a dialecticis aut a physicis tractantur, num quid eorum divinari potest? unusne mundus sit an plures...; *Ep. ad. fam.* 9.26.3, te quaesitum unum caelum esset an innumerabilia; cf. *N.D.* 2.48, *Tim.* 12 etc. **Philo** *Abr.* 162, ἡ δὲ [διάνοια] ... εἰς σκέψιν ἦλθε ... καὶ πότερον ἄπειρα ἢ πεπερασμένα καὶ πότερον εἷς ἢ πλείονές εἰσι κόσμοι ... (cf. *Spec.* 3.189); *Ebr.* 199 οἱ γὰρ ἄπειρον τὸ πᾶν εἰσηγούμενοι τοῖς πεπερασμένον εἶναι λέγουσιν (perhaps from Aenesidemus); *Opif.* 171 τέταρτον δ' ὅτι καὶ εἷς ἐστὶν ὁ κόσμος ... εἰοὶ γὰρ οἱ πλείους ὑπολαμβάνοντες εἶναι κόσμους, οἱ δὲ καὶ ἀπείρους ... **Seneca** *De otio* 4.2, ut quaeramus ... unum sit hoc, quod maria terrasque et mari ac terris inserta complectitur, an multa eiusmodi corpora deus sparsit. **Pliny** *NH* 1 (= table of contents), Libro II. continentur: an finitus sit mundus et an unus.

de forma eius. de motu eius. cur mundus dicatur; 2.1, furor est ... alios innumerabiles tradidisse mundos... aut, si una omnes incubaret, totidem tamen soles totidemque lunas ... **Aëtius** *ap. ps.Pl.* 1.*Praef.* 52.2 Μαυ, ζητεῖται ὁμοίως εἰ ἄπειρος ὁ κόσμος (example of a theoretical question); cf. 1.5 εἰ ἐν τῷ πᾶν. **Plutarch** *De def. orac.* 422A–423B. **Ps.Plutarch** *De Homero* 105. **Quintilian** *Inst. Or.* 7.2.6, (on *generales quaestiones*) quaeritur per coniecturam et qualitatem circa modum speciem numerum: ‘an sol maior quam terra, luna globosa an plana an acuta, unus mundus an plures’; cf. 7.4.1. **Lucian** *Icar.* 8, καὶ γὰρ αὐτὴ καὶ αὐτὴ νεανικὴ αὐτοῖς ἡ μάχη, τοῖς μὲν τέλει τὸ πᾶν περιγράφουσιν, τοῖς δὲ ἀτελὲς τοῦτο εἶναι ὑπολαμβάνουσιν; οὐ μὴν ἀλλὰ καὶ παμπόλλους τινὰς εἶναι τοὺς κόσμους ἀπεφαίνοντο καὶ τῶν ὥς περὶ ἐνὸς αὐτῶν διαλεγομένων κατεγίνωσκον. *Par.* 11 (on Epicurus), ὁ γὰρ ζητῶν περὶ σχήματος γῆς καὶ κόσμων ἀπειρίας καὶ μεγέθους ἡλίου καὶ ἀποστημάτων καὶ πρώτων στοιχείων καὶ περὶ θεῶν, εἴτε εἰσὶν εἴτε οὐκ εἰσὶ ... οὐ μόνον ἐν ἀνθρωπίναις, ἀλλὰ καὶ ἐν κοσμικαῖς ἐστὶν ὀχλήσεσιν. **Galen** *De locis affectis* 3.5.8 159.6 Kühn, ἄπειρόν τε τὸ πᾶν ἢ πεπερασμένον, ἢ πολλοὺς εἶναι κόσμους ἢ ἀπεριλήπτους κατὰ τὸν ἀριθμὸν ἢ ἓνα μόνον; in *Hp. de victu acut.* 1.12 125.12 Helmreich, οὐτ’ εἰ ἄπειρος οὐτ’ εἰ μόνος οὗτος εἷς ἐστὶν οὐτ’ εἰ πλείους οὐτ’ πόσοι τὸν ἀριθμὸν, εἴπερ πλείους, οὐτ’ εἰ πλῆθος ἀπεριλήπτον ἢ ἄπειρον αὐτῶν (given as an example of philosophical διαφωνία that cannot be settled by a clear proof); *De pecc. dign.* 3.4 De Boer, οὐδὲ εἰ πεπερασμένον ἢ ἄπειρον τὸ πᾶν; also as part of a list of theoretical questions, *De plac. Hp. et Pl.* 9.7.9 De Lacy, καὶ εἰ ὁ κόσμος οὗτος ἐν ἑαυτῷ περιέχεται καὶ εἰ πλείους ἐνὸς καὶ εἰ πάμπολύ τι πλῆθος. **Hermogenes** *Progymn.* 11 25.8 Rabe, εἰ πολλοὶ κόσμοι (example of a θέσις). **Alexander of Aphrodisias** in *Top.* 76.10 (see below on ch. 2), 171.15. **Hermias** *Irrisio* 18, 656.7 Diels. **Sextus Empiricus** *Adv. Phys.* 1.332–334, καὶ δὴ οἱ μὲν ἀπὸ τῆς στοᾶς φιλόσοφοι διαφέρειν ὑπολαμβάνουσι τὸ ὅλον καὶ τὸ πᾶν ... ὁ δὲ Ἐπίκουρος ἀδιαφόρως ... οἱ δὲ φάμενοι μὴδ’ ὅλους εἶναι κενόν, ὥς οἱ ἐκ τοῦ περιπάτου ... **Origen** *De Princ.* 3.1, 3.4. **Dionysius** *ap. Eus. PE* 14.23.1, πότερον ἐν ἐστὶ συναφὲς τὸ πᾶν, ὥς ἡμῖν τε καὶ τοῖς σοφωτάτοις Ἑλλήνων Πλάτῳ καὶ Πυθαγόρᾳ καὶ τοῖς ἀπὸ τῆς Στοᾶς καὶ Ἡρακλείτῳ φαίνεται, ἢ δύο, ὥς ἴσως τις ὑπέλαβεν, ἢ καὶ πολλὰ καὶ ἄπειρα, ὥς τισιν ἄλλοις ἔδοξεν ... **Aphthonius** *Progymn.* 41.19, see below on ch. 2. **Basil** in *Hex.* 3.3. **Ambrose** *Exam.* 1.1.3, nam Pythagoras unum mundum adserit, alii innumerabiles dicunt esse mundos, ut scribit Democritus...; cf. *Exam.* 2.2.5, *De fide* 4.4.43, *Ep.* 45.15. **Augustine** *C. Ac.* 3.23, quomodo enim inter Democritum et superiores physicos de uno mundo et innumerabilibus item diiudicabimus; *C.D.* 18.41, pro sua quisque opinione certabant, alii adserentes unum, alii innumerabiles mundos ...; cf. 12.12 cited below on ch. 4. **Proclus** in *Ti.* 1.437.25, τοῖς μὲν γὰρ δοκεῖ δύο εἶναι τὰ διαρούμενα νῦν ὑπὸ τοῦ Πλάτωνος (i.e. at *Ti.* 31a), τοῖς δὲ τρία εἶναι τὰ διαρούμενα; 438.15–17, καὶ κόσμους ἀπείρους εἶναι πιθανόν, εἴπερ μὴ εἷς· τὸ γὰρ κενὸν ἄπειρον ὃν ἀπείρων ἔσται κόσμων δεκτικόν. **Johannes Philoponus** in *APo.* 239.2, ὅταν δὲ (πότερον) ἄπειρος ἢ πεπερασμένος, τὸ ποσόν (ζητοῦμεν). **Simplicius** in *Cael.* 202.11, διὰ ταύτην γὰρ οἱ μὲν ἓνα κόσμον καὶ πεπερασμένον ἔλεγον, ὅσοι μὴ ἐδέχοντο τὸ ἄπειρον ἐν ἀρχῇ, ὥς Ἀριστοτέλης καὶ Πλάτων, οἱ δὲ ἓνα ἄπειρον, ὥς Ἀναξίμενης, ἀέρα ἄπειρον τὴν ἀρχὴν εἶναι λέγων, οἱ δὲ καὶ τῷ πλήθει ἀπείρους κόσμους, ὥς Ἀναξίμανδρος μὲν ἄπειρον τῷ μεγέθει τὴν ἀρχὴν θέμενος ἀπείρους ἔξ αὐτοῦ τῷ πλήθει κόσμους ποιεῖν δοκεῖ,

Λεύκιππος δὲ καὶ Δημόκριτος ἀπείρους τῷ πλήθει τοὺς κόσμους ἐν ἀείρῳ τῷ κενῷ καὶ ἔξ ἀπείρων τῷ πλήθει τῶν ἀτόμων συνίστασθαι φησι ...; *in Ph.* 1121.5 (making the connection to the question of temporality and eternity). **Isidore of Seville** *De rer. nat.* 13, *utrum enim unum sit caelum an plures contentio est*. See further the discussion at Pépin (1964) 72–78, to which we owe several references. The list of texts could be greatly extended.

Aëtius *Placita* 2.2

Περὶ σχήματος κόσμου

WITNESSES

Ps.Plutarch 2.2, ps.Galen 45, Cyril *c. Jul.* 2.15, Qusṭā Ibn Lūqā 2.2  
Stobaeus 1.15.6b  
Theodoret 4.16  
Cf. Achilles 6, *Dox. Pasq.* XXIII

ANALYSIS

1. After introducing the cosmos in ¶1 and discussing its numerical and spatial aspects, A now proceeds to treat one of its chief characteristics, its shape. The same sequence is found in ¶13–14, on the stars and their shape. It is abundantly clear that A is following a standard sequence of question types, in this case a progression from nature/quantity to quality. See the discussion in Part I sect. 1 (with particular reference to the beginning of Book II) and further discussion on the sequence of question types in our analysis of ch. 2a sect. 2.

2. P preserves the following text:

β'. Περὶ σχήματος κόσμου

P2.2.1 οἱ μὲν Στωικοὶ σφαιροειδῆ τὸν κόσμον,  
P2.2.2. ἄλλοι δὲ κωνοειδῆ,  
P2.2.3. οἱ δ' ὠοειδῆ.  
P2.2.4 Ἐπίκουρος δ' ἐνδέχεσθαι μὲν εἶναι σφαιροειδεῖς τοὺς κόσμους,  
ἐνδέχεσθαι δὲ καὶ ἐτέροις σχήμασι κεχρηθῆναι.

The editors print this brief text as two lemmata, but we prefer to split it into four, so that the structure of the doxai is presented more clearly. The other witnesses in the P tradition add very little. G abbreviates the title to Περὶ σχήματος only. He reads κυκλοειδῆ instead of ὠοειδῆ, a somewhat puzzling *Verschlimmbesserung* (to which we shall return in the next chapter), and also abbreviates the doxa of Epicurus. A minor ms. of P has an interesting alternative title noted in the margin: εἰ σφαιροειδεῖς ὁ κόσμος ἢ κυμβοειδεῖς (cup-like). The latter term is not found in LSJ or the TLG, and is most likely a scribal error for κωνοειδῆ.

3. S also preserves material from this chapter, but he does not include it in his cosmological chapters (i.e. in 1.21–26). Instead he places it in that part of his work dealing with principles and fundamental physical concepts based on A's Book I. The following text is appended to five lemmata taken from A 1.14.

- 1.15 title    Περί σχημάτων  
 1.15.6b  
 S1            οἱ Στωικοὶ σφαιροειδῆ τὸν κόσμον ἀπεφάναντο.  
 S2            Λεύκιππος καὶ Δημόκριτος σφαιροειδῆ τὸν κόσμον.

The first lemma is the same as P 2.2.1, except that the characteristic verb of affirmation ἀπεφάναντο is added. S deletes the two anonymous lemmata, perhaps because they are too eccentric for his purposes. The second lemma is virtually identical with the first, except that it has different name-labels. There is no reason to think it is not from A, but a reason has to be found for the nearly identical content. There is no equivalent of P's final lemma in S.

4. T continues on from his paraphrase of A 2.1 as follows:

*GAC* 4.16, 104.15–17

- T1    οἱ μὲν σφαιροειδῆ τοῦτον εἶναι,  
 T2    οἱ δὲ ἑτεροειδῆ  
 T3    καὶ οἱ μὲν μυλοειδῶς,  
 T4    οἱ δὲ τροχοῦ δίκην περιδινεῖσθαι.

We are thus given two very general diaereses without any name-labels. The former, distinguishing between spherical and other shapes, can be seen as a very compact summary of the entire chapter A 2.2. It reduces P's two diaereses to a single type A diaeresis. The latter refers to motion rather than shape and distinguishes between millstone-like and wheel-like motion. It seems out of place in the present chapter. We reserve a discussion of these lemmata for the next chapter, A 2.2a\*.

5. Interesting additional evidence is supplied by Achilles and the *Doxographica Pasquali* as follows:

Achilles *Isagoge* 5, 37.8–13 Maass ~ 16.10–15 Di Maria

σχῆμα δὲ κόσμου οἱ μὲν κωνοειδές, οἱ δὲ σφαιροειδές, οἱ δὲ ὀσφειδές, ἧς δόξης ἔχονται οἱ τὰ Ὀρφικά μυστήρια τελοῦντες. σαφηνείας δὲ ἕνεκα πιθανῆς παρελήφθη τοῦ φύου ἢ εἰκόν. ἄμεινον δὲ σφαίρας ἐκδέχεσθαι σχῆμα ἔχειν τὸν οὐρανὸν καὶ τὰ ἐν αὐτῷ κατὰ τὸν Ἐμπεδοκλέα, ὃς ἔφη οὕτως 'σφαῖρος κυκλοτερεῖς μονίῃ περιηγεί χαίρων'.

*Dox. Pasq.* XXIII

σχῆμα οὐρανοῦ· οἱ μὲν σφαιροειδέες, οἱ δὲ κωνοειδέες, (οἱ δὲ ὠοειδέες), ἧς ἔχονται δόξης οἱ Ὀρφικοί.

Ach gives the same three views as we find in P, except the order has been changed to κωνοειδέες–σφαιροειδέες–ὠοειδέες and all three are presented as anonymous. The scholion in Basil, which is patently a paraphrase of Ach, reverts to the original order, which indeed follows a more logical sequence. The information about the Orphics may be the work of Achilles himself (cf. §4 33.17–21 Maass ~ 12.6–9 Di Maria, where the τάξις of the cosmos is compared to an egg).<sup>86</sup> But there is a reference to the Orphics at A 2.13.15\* (= P 2.13.8), while at A 2.31.4\* (= S 1.26.5) Empedocles is recorded as comparing the shape of the cosmos to an egg. So this information is more likely to go back to the anterior tradition of the *Placita*, but was not included by A. Ach proceeds to resolve the diaeresis in favour of one of the options, which goes against the usual practice of the *Placita*. The appeal to Empedocles for the spherical view suggests that the verse cited (= 31B27.4, 28.2 DK) may have been present in the *Placita*. The same verse, but with a different variant (γαίων instead of χαίρων) is found at the beginning of S's chapter (1.15.2b). A occasionally uses poetic quotes to give a doxa (a fine example at P 1.18.2 on the void). But it would be too speculative to include it in our reconstruction.

6. On the basis of the evidence presented by our witnesses the present chapter contains five lemmata. The first three explore the cosmos' shape in a type C diaeresis with three possibilities, of which only the first receives a name-label, i.e. the Stoics (note that they also represent the spherical position in 2.14.1\*, 2.22.3\* and 2.27.1\* on the shape of the stars, the sun and the moon respectively). The same three possibilities are found in Achilles (and also in the *Dox. Pasq.* if the conjecture is accepted).

The fourth lemma, found only in S, is identical to that of the Stoics. Why should it be repeated? The only plausible solution is that there is a connection with the basic division made in the previous chapter between unicists and infinitists, i.e. the Stoics represent the former,

<sup>86</sup> Various cosmological texts relating to the shape or structure of an egg are collected at Kern (1922) no. 70.

Leucippus and Democritus the latter. Even though they posit infinite *kosmoi*, the cosmos here is in the singular. This must mean that they regard *our* cosmos as spherical.

Epicurus in the fifth lemma also belongs to the infinitist group, but he is deliberately contrasted with his atomistic predecessors. Hence the word δέ, a significant particle when placed as second word in a doxa in A.<sup>87</sup> His view that various shapes are *possible*<sup>88</sup> we call a ‘modal’ view. Various other examples will occur in subsequent chapters (A2.13.15\*, 2.22.4\*, cf. P 3.15.11). Epicurus has not only our cosmos in mind, but (by implication) all possible *kosmoi*, of which some are spherical, while others have other shapes. This recalls the reduction carried out by T to σφαιροειδῆ and ἑτεροειδῆ (note he uses the plural). Clearly the doxa of Epicurus represents the most radical view. From this viewpoint the other atomist doxa can be seen as in a sense an *intermediate* position between the Stoic and the Epicurean view.<sup>89</sup> The chapter thus moves from the dominant view (i.e. held by the majority of philosophers, although this is not indicated) to the most radical view. We note that S is not so interested in this radical ‘modal’ view. He leaves it out here and also in his treatment of A 2.22\*, but does retain it in his excerpting of A 2.13\*.<sup>90</sup>

Finally we should note that there are cross-links with the chapter on shape in Book I. There in P 1.14.1 we read that for the Pythagoreans all the elements have spherical shapes, except fire, which is κωνοειδές.<sup>91</sup> Moreover in S 1.15.6a Cleanthes is said to be the only Stoic to declare that fire is κωνοειδές. We note that the same philosopher is credited with the view that the stars are κωνοειδεῖς in 2.14.2, where again he

<sup>87</sup> Usually doxai are written out without connecting particles. Examples of adversative use of δέ in a diaeresis are found in Book II at 2.3.2\*, 2.4.6\*, 2.9.2\*, 2.14.2\*, 2.19.2\*, 2.23.9\* etc.

<sup>88</sup> Not in the contingent sense (the different shapes are real), but in the realm of speculation due to the weakness of human sense-perception. The crucial term is ἐνδέχασθαι; cf. D.L. 10.87–88, L&S 18c, Usener-Gigante-Schmid (1977) 253. The term is based on the use of modal propositions in formal logic.

<sup>89</sup> But only in the way that A presents it, since the other atomists would have also postulated a diversity of shapes for other *kosmoi*.

<sup>90</sup> See Vol. I:236 (where 2.21 should read 2.22; the modal view in P 2.21 is interpolated from 2.22, as recognized by Diels).

<sup>91</sup> Diels is almost certainly right that the reference to the cosmos as a sphere in the version in S 1.15.6a is the result of confusion on the part of S or a corruption.



is contrasted with the other Stoics. Clearly the various chapters on shape in Books I & II are inter-connected, both in method and in terminology.<sup>92</sup>

7. If the above analysis is on the right track, then the chapter is structured by means of no less than four diaereses. The major one is between unicists and infinitists, as introduced in the previous chapter (= type A). The views of the former are presented in a list of three views (= type C), of which only the first receives a name-label.<sup>93</sup> The views of the latter are again divided. In the one case only our cosmos is considered, in the other all *kosmoi* (by implication) are included, which leads to a further type A division between spherical and other shapes. As we have already noted,<sup>94</sup> the antithesis here is unsatisfactory, since the fourth doxa only speaks (by implication) of our cosmos, and it is unlikely that in the view of the atomists the remaining infinite *kosmoi* would all have the same shape. The arrow in the diagram below indicates the movement towards the most radical view.

8. From the impressive number of parallels listed below it is clear that the problem treated in this chapter was regarded as a standard example of a philosophical question (*quaestio infinita* or θέσις) in the rhetorical schools. See the texts of Hermagoras, Hermogenes, Alexander of Aphrodisias (it does not occur in Aristotle's *Topics*; the example is no doubt taken from *Ph.* 2.2 193b30), Marius Victorinus, Aphthonius etc.<sup>95</sup> For Aristotle it is already a standard question of physics (*ibid.*). Lucian uses it as an illustration when developing the Socratic topos of focusing on the soul. From Plato onwards there is a clear correlation between geometric shapes (perfect or otherwise)—also used for the elements—and the cosmos' shape. Other shapes are possible as well, as shown by Aristotle's examples at *De Caelo* 2.4 287a20 (φακοειδής, ὠοειδής). We note here the terminology of words ending in -ειδής which is extremely common in A.<sup>96</sup> In quite a few texts alternatives are given for the cos-

<sup>92</sup> Cf. also the argument from the perfect bodily shape to that of the cosmos (already present in Plato) in Alexander in *Top.* 76.10–15 (text below). This is missing in A.

<sup>93</sup> Indicated in the diagram below with a straight line, as explained in the Introduction to the *Specimen Reconstructionis* sect. 3.

<sup>94</sup> See above n. 89.

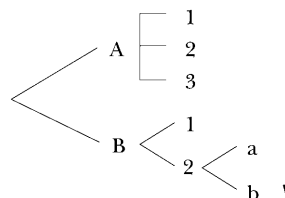
<sup>95</sup> See further Part I sect. 17 at n. 426.

<sup>96</sup> In order to indicate this usage we generally translate the words with a composite term 'x-like', where x is ball, cone, egg etc.

mos' sphericity which are used for a *reductio ad absurdum*; cf. Aristotle, Euclid, Proclus. These—always presented theoretically—may well have been the origin of the alternatives given by A in the second and third doxa.<sup>97</sup> The alternative ῥοειδής is found in Aristotle, κωνοειδής in Euclid. The question, however, gets a new impulse from Epicurus, who assumes a multitude of geometric shapes (cf. also Velleius in Cicero). The text at D.L. 10.74 is difficult. We print the text as printed by the most recent editor. But there is much to be said for Arrighetti's view that only the phrase ἀλλὰ καὶ διαφορὸν αὐτοὺς ἐν τῇ ὑβ' Περί (φύσεως) αὐτὸς φησιν is a gloss.<sup>98</sup> This opens up the exciting possibility that Epicurus made use of an early version of what was later to become the *Placita*. One thinks in the first instance, of course, of Theophrastus' *Physikai doxai*, but this is far from certain.<sup>99</sup>

STRUCTURE (see above sect. 7)

- A single cosmos
  - 1 ball-like (= § 1)
  - 2 cone-like (= § 2)
  - 3 egg-like (= § 3)
- B infinite *kosmoi*
  - 1 single shape: ball-like,  
i.e. our cosmos (= § 4)
  - 2 multiple shapes
    - a some *kosmoi* ball-like,
    - b others other shapes (= § 5)



RECONSTRUCTED TEXT

β'. Περί σχήματος κόσμου<sup>1</sup>

- 1 οἱ μὲν Στωικοὶ σφαιροειδῆ τὸν κόσμον,
- 2 ἄλλοι δὲ κωνοειδῆ,
- 3 οἱ δ' ῥοειδῆ<sup>2</sup>.
- 4 Λεύκιππος καὶ Δημόκριτος σφαιροειδῆ τὸν κόσμον,
- 5 Ἐπίκουρος δ' ἐνδέχεσθαι μὲν εἶναι σφαιροειδεῖς τοὺς κόσμους,  
ἐνδέχεσθαι δὲ καὶ ἑτέροις σχήμασι κεχρηθῆναι.

<sup>97</sup> See also theoretical discussions on alternative shapes of the moon discussed in ch. 27 sect. 6.

<sup>98</sup> Arrighetti (1973) 65.

<sup>99</sup> See further Mansfeld (1994) 38–41, Runia (1997) 98–99, Sedley (1998) 182–185.

- 1 Περὶ σχήματος G, εἰ σφαιροειδεῖς ὁ κόσμος ἢ κυμβοειδεῖς P<sup>marg</sup>  
 2 ῥοειδῇ PQCyrlAch, κυκλοειδῇ G

§1 *SVF* 2.547; §4 67A22 DK; §5 fr. 302 Usener

## 2. On the shape of the cosmos

- 1 The Stoics (declare that) the cosmos is ball-like (i.e. spherical),  
 2 but others (declare that it is) cone-like,  
 3 while yet others (declare that it is) egg-like.  
 4 Leucippus and Democritus (declare that) the cosmos is ball-like.  
 5 Epicurus, however, (declares that) it is possible that the *kosmoi* are ball-like, but that is possible that they make use of other shapes as well.

## DIALECTICAL-DOXOGRAPHIC PARALLELS

**Plato** *Ti.* 55c–d (five perfect geometric solids, thus perhaps five *kosmoi*). **Aristotle** *Ph.* 2.1 193b28, questions for natural philosophers, e.g. περὶ σχήματος σελήνης καὶ ἡλίου, καὶ διὴ καὶ πότερον σφαιροειδὴς ἡ γῆ καὶ ὁ κόσμος ἢ οὐ; *Cael.* 2.4 286b33–87a5; 287a11–23, ἔτι δὲ ἐπεὶ φαίνεται καὶ ὑπόκειται κύλῳ περιφερεσθαι τὸ πᾶν, δέδεικται δ' ὅτι τῆς ἐσχάτης περιφορᾶς οὔτε κενόν ἐστιν ἔξωθεν οὔτε τόπος, ἀνάγκη καὶ διὰ ταῦτα σφαιροειδῇ εἶναι αὐτόν. εἰ γὰρ ἔσται εὐθύγραμμος ... ὁμοίως δὲ καὶ εἴ τι ἄλλο σχῆμα γένοιτο μὴ ἴσας ἔχον τὰς ἐκ τοῦ μέσου γραμμάς, οἷον φακοειδὲς ἢ ῥοειδὲς ... **Epicurus** *ap.* D.L. 10.74 (and scholion), 758.9 Marcovich, ἔτι δὲ καὶ τοὺς κόσμους οὔτε ἐξ ἀνάγκης δεῖ νομίζειν ἓνα σχηματισμὸν ἔχοντας (\*) [ἀλλὰ καὶ διαφόρους αὐτοὺς ἐν τῇ ἰβ' Περὶ (φύσεως) αὐτὸς φησιν· οὓς μὲν γὰρ σφαιροειδεῖς, καὶ ῥοειδεῖς ἄλλους, καὶ ἀλλοιοσχήμονας ἑτέρους· οὐ μὲντοι πᾶν χρῆμα ἔχειν ...]; cf. 10.88 κόσμος ἐστι περιοχὴ τις οὐρανοῦ ... καὶ στρογγύλην ἢ τριγώνον ἢ οἷαν δήποτε περιγραφὴν (ἔχουσα)· πανταχῶς γὰρ ἐνδέχεται. **Euclid** *Phaen. Praef.* 4.26 Menge, διὰ διὴ τὰ προειρημένα πάντα ὁ κόσμος ὑποκείσθω σφαιροειδής· εἴτε γὰρ ἦν κυλινδροειδής ἢ κωνοειδής ... **Hermagoras** *ap.* Cic. *Inv.* 1.6.8, quaestionem eam appellat quae habet in se controversiam in dicendo positam sine certarum personarum interpositione, ad hunc modum: 'ecquid sit bonum praeter honestatem?' 'verine sint sensus?' 'quae sit mundi forma?' 'quae sit solis magnitudo?' **Cicero** *N.D.* 2.48 (Balbus), nec enim hunc ipsum mundum pro certo rotundum esse dicitis, nam posse fieri ut sit alia figura, innumerabilesque mundos alios aliarum esse formarum; cf. 1.24 (Velleius) at mihi vel cylindri vel quadrati vel conī vel puramidis videtur esse formosior (forma) [than Plato's sphere]. **Philo** *Prov.* 2.56. **Hermogenes** *Progymn.* 11 17.30 Rabe (example of a θέσις), οἷον εἰ σφαιροειδὴς ὁ κόσμος. **Sceptics** *ap.* D.L. 9.104, οὐ γὰρ εἰσιν [αἱ φωναί] ὅμοιαι τῷ λέγειν ὅτι σφαιροειδὴς ἐστὶν ὁ κόσμος. **Pliny** *NH* 1 (= table of contents), see above on ch. 1. **Demonax** *ap.* Stob. *Ecl.* 2.1.11 5.10–13 Wachsmuth, ἐξεταζόντων τινῶν, εἰ ὁ κόσμος ἐμψυχος, καὶ αὐτὸς εἰ σφαιροειδής, ὑμεῖς, ἔφη, περὶ μὲν τοῦ κόσμου πολυπραγμονεῖτε, περὶ δὲ τῆς αὐτῶν ἀκοσμησίας οὐ φροντίζετε. **Cleomedes** *Cael.* 1.5 (mainly via comparison with the earth).

**Adrastus** in Theon *Expos.* 120.10–15, 23–27, ὅτι γὰρ σφαιρικὸς ὁ κόσμος καὶ ἡ γῆ σφαιρικὴ ... δῆλον ... κωνικὸν γὰρ ἢ κυλινδρικὸν ἢ πυραμοειδὲς ἢ τι ἕτερον στερεὸν σχῆμα παρὰ τὸ σφαιρικὸν τοῦ παντὸς ἔχοντος, κατὰ τῆς γῆς οὐκ ἂν ταῦτα ἀπῆντα ...; cf. **Astronomers** (including **Ptolemy**) *ap. Simp. in Cael.* 410.26–11.9. **Alexander of Aphrodisias** in *Top.* 40.19–23, difference between a πρόβλημα and a πρότασις, τῆς γὰρ ἀντιφάσεως ἂν μὲν τὸ “πότερον” προτάξωμεν οἷον “πότερον ὁ κόσμος σφαιροειδὴς ἐστὶν ἢ οὐ”; ἂν δὲ τὸ “ἄρα”, πρότασις, οἷον “ἄρα γε ὁ κόσμος σφαιροειδὴς ἐστὶν ἢ οὐ”; 76.10–15, dialectician arguing for one side of the opposed positions, οἷον ὅτι αἰδῖος ὁ κόσμος ἢ ὅτι σφαιροειδὴς. ἐπιχειρήσαι γὰρ ἂν τις διαλεκτικῶς εἰς τοῦτο ὅτι τῷ τελειοτάτῳ τῶν σωμάτων οἰκεῖον τὸ τελειότατον σχῆμα, ὃ δὲ κόσμος τελειότατον τῶν σωμάτων πάντα γὰρ τὰ ἄλλα ἐν ἑαυτῷ ἔχει τῷ κόσμῳ ἄρα τὸ τελειότατον τῶν σχημάτων οἰκεῖον· ἀλλὰ μὴν τελειότατον ἢ σφαῖρα τῶν σχημάτων· οὔτε γὰρ προσθήκη οὔτε ἀφαίρεσις δέχεται· οἰκεῖον ἄρα τὸ σφαιρικὸν σχῆμα τῷ κόσμῳ; cf. 171.15, 294.12 etc.; cf. also *ap. Simp. in Cael.* 409.32–410.15. **Theophilus of Antioch** *Ad Aut.* 2.32, ταῦτα δὲ μὴ ἐπιστάμενοι οἱ συγγραφεῖς βούλονται τὸν κόσμον σφαιροειδῆ λέγειν καὶ ὥσπερ εἰ κύβῳ συγκρίνειν αὐτόν. **Tertullian** *Ad nat.* 2.4.13–14, sed quid ego cum argumentationibus physiologicis? sursum mens ascendere debuit de statu mundi, non in incerta descendere. rotunda mundo Platonica forma; quadratum eum angulatumque commentum ab aliis, credo, circino rotundo ita collegit, quod sine capite solum credi laborat (probably based on Cicero). **Marius Victorinus** in *Cic. Rhet.* 176.17–22 Halm (commenting on text from *De inv.* cited above), ‘quae sit mundi facies [in Cicero’s text forma]’: multi dicunt mundum in modum sphaerae esse collectum, multi oblonga rotunditate esse formatum, multi plana facie, multi quadrata, multi in camerae modum [cf. *Is.* 40:22], scilicet ut sub terra non sit similis, ac supra caput est, mundi facies (note confusion between cosmos and earth); cf. **Basil** in *Hex.* 1.8 14.23 de Mendieta-Rudberg, καὶ περὶ τοῦ σχήματος δὲ ἱκανὰ ἡμῖν τὰ παρ’ αὐτοῦ, εἰπόντος ἐν δοξολογίᾳ θεοῦ· “ὁ στήσας τὸν οὐρανὸν ὥσει καμάραν” (*Is.* 40:22); cf. **Ambrose** *Exam.* 1.6.21. **Aphthonius** *Progymn.* 41.19, τῶν δὲ θέσεων αἱ μὲν εἰσι πολιτικάι, αἱ δὲ θεωρητικάι ... θεωρητικάι δὲ αἱ μόνῳ τῷ νῷ θεωρούμεναι, οἷον εἰ σφαιροειδὴς ὁ οὐρανός, εἰ κόσμοι πολλοί· ταῦτα γὰρ εἰς πεῖραν μὲν ἀνθρώποις οὐκ ἔρχεται, μόνῳ δὲ θεωρεῖται τῷ νῷ. **Sopater** *Schol. Ad Hermog.* Status V p. 3.2 Waltz, φιλόσοφον οὖν τὸ ζήτημα, ζητοῦμεν γὰρ, εἰ κύκλος ὁ κόσμος ... **Proclus** in *Ti.* 2.76.3, εἰ γὰρ μὴ σφαιροειδὴς ἦν ὁ οὐρανός, ἀλλὰ κύλινδρος ἢ τι ἄλλο σχῆμα τοιοῦτον ... **Johannes Philoponus** in *APb.* 239.1, ὅταν δὲ πότερον σφαιροειδὴς ἐστὶν ἢ ποῖον ἕτερον ἔχει σχῆμα, τὸ ποῖον (ζητοῦμεν).

Aëtius *Placita* 2.2a

Περὶ κινήσεως κόσμου

WITNESSES

Theodoret 4.16 (cf. Achilles 7, 9)

Stobaeus 1.21.3b

ANALYSIS

1. As we saw in the previous chapter T follows his diaeresis on the shape of the cosmos with another:

*GAC* 4.16, 104.16–17

T1 καὶ οἱ μὲν μυλοειδῶς,

T2 οἱ δὲ τροχοῦ δίκην περιδινεῖσθαι.

This diaeresis, involving two very compactly presented doxai, does not correspond to anything else we find in our witnesses. Diels considered it to be derived from A. True to his method, he numbered it (2.2.4), but did not place it in his two columns, citing it below the right column.

2. There are two considerations which show that Diels was on the right track. The first relates to the broad structure of his treatment of cosmology. In Book II A has the following sequences of chapters:<sup>100</sup>

2.1 Περὶ κόσμου

2.2 Περὶ σχήματος κόσμου

2.13 Τίς οὐσία τῶν ἀστέρων πλανητῶν τε καὶ ἀπλανῶν

2.14 Περὶ σχημάτων ἀστέρων

2.15 Περὶ τάξεως ἀστέρων

2.16 Περὶ τῆς τῶν ἀστέρων φορᾶς καὶ κινήσεως

2.20 Περὶ οὐσίας ἡλίου

2.21 Περὶ μεγέθους ἡλίου

2.22 Περὶ σχήματος ἡλίου

2.23 Περὶ τροπῶν ἡλίου

2.24 Περὶ ἐκλείψεως ἡλίου

---

<sup>100</sup> We give the titles as determined in our reconstruction.

- 2.25 Περί οὐσίας σελήνης
- 2.26 Περί μεγέθους σελήνης
- 2.27 Περί φωτισμῶν σελήνης
- 2.28 Περί ἐκλείψεως σελήνης

It is evident that A is following a more or less fixed sequence of questions involving the nature (essence), the number (quantity), the shape (quality) and the motion of the cosmos and the heavenly bodies. As we argue elsewhere, this sequence goes back to the question-types first formulated by Aristotle and based on his theory of dialectic and scientific knowledge, loosely combined with his doctrine of the categories.<sup>101</sup> The solstices and eclipses of the sun and the illuminations and eclipses of the moon are all particular applications of the topic of motion.<sup>102</sup> Confirmation of the general scheme can be found in Book III when A gets around to presenting the *placita* on the earth. Here there are the following series of chapters:<sup>103</sup>

- 3.9 Περί γῆς καὶ τίς ἢ ταύτης οὐσία καὶ πόσαι
- 3.10 Περί σχήματος γῆς
- 3.11 Περί θέσεως γῆς
- 3.12 Περί ἐγκλίσεως γῆς
- 3.13 Περί κινήσεως γῆς etc.

Here we have the same scheme which follows the check-list of nature (and quantity), quality, location/placement, motion. On the basis of these parallel chapters, it is more than likely that A would have included a chapter on the cosmos' motion. A fine parallel is found in the table of contents of Pliny's *Natural history*, where the first three subjects are: the world—is it one (cf. A 2.1\*)? its shape (cf. 2.2\*); its motion (cf. 2.2a\*; text below). We note also that that in Book II subjects first broached in the abstract in Book I are applied to the cosmos. Book I has a chapter entitled Περί κινήσεως (P 1.23).

The second consideration is that there is a noteworthy linguistic parallel between T's text and the doxa at P 3.13.3 (this chapter is not preserved in S):<sup>104</sup>

<sup>101</sup> See Mansfeld (1990a) 3193–3208, (1992a) 92–93, and in this vol. Part I sect. 1.

<sup>102</sup> As explicitly noted in both cases by Mansfeld (1992a) 93.

<sup>103</sup> Titles as they are found in P.

<sup>104</sup> Note that this text uses the image of the cart-wheel in terms of motion; at 2.20.1\* it is used for the shape of the sun's ring in Anaximander (also found at Ach 19, 27.14 Di Maria).

Ἡρακλείδης ὁ Ποντικὸς καὶ Ἐκφαντος ὁ Πυθαγόρειος κινουσι μὲν τὴν γῆν, οὐ μὴν γε μεταβατικῶς, ἀλλὰ τρεπτικῶς τροχοῦ δίκην ἐνηξονισμένην, ἀπὸ δυσμῶν ἐπ' ἀνατολὰς περὶ τὸ ἴδιον αὐτῆς κέντρον.

The phrase τροχοῦ δίκην (in the manner of a wheel), here qualifying the participle ἐνηξονισμένην, is exactly the same as that used by T. It is a rare expression, with fewer than ten examples in the whole of Greek literature. It is very likely that in 4.16 T derived it from A, but not from the text in Book III.

3. Further support for the hypothesis that A included a chapter on the cosmos' motion is also supplied by Achilles. His sequence of chapters is:

- §5 Τίς οὐσία οὐρανοῦ (= κόσμου)
- §6 Περὶ σχήματος κόσμου
- §7 Περὶ περιφορᾶς
- §8 Εἰ ἔστι τι ἐκτός
- §9 Εἰ ἔστηκεν ὁ κόσμος

The subject of the cosmos' motion is in fact already broached in §6 and then continued in §7 and §9. Since Achilles contains material that goes back to the anterior tradition of the *Placita*, it is likely that A, who is indebted to the same tradition, also dealt with this question.

4. We conclude, therefore, that in all likelihood A contained a chapter Περὶ κινήσεως κόσμου. Contrary to his usual practice, P did not include it,<sup>105</sup> perhaps because it was short and added little. S may have deleted the diaeresis because it was anonymous, as also happened in the case of A 2.2.2–3\*. The heading could have been subsumed under 1.19 Περὶ κινήσεως, but this chapter only contains the contents of P 1.19, nothing from Book II (see further the next section).

5. One might also consider a further fragment in S which has proved difficult to place. It is found as the second of a cluster of three Stoic doxai at 21.3b, following the lemma A 2.1.9\*:

1.21.3b Περὶ κόσμου κτλ

- S1 μίτη αὐξεσθαι δὲ μίτη μειοῦσθαι τὸν κόσμον, τοῖς δὲ μέρεσιν ὅτε μὲν παρεκτείνεσθαι πρὸς πλείονα τόπον, ὅτε δὲ συστέλλεσθαι.

<sup>105</sup> On P's method of abridgement and other chapters that he left out see Vol. I:186.

The name-label must be the Stoics. Diels placed the lemma in his reconstruction of 2.4 towards the end, but there is no reason why this lemma should occur in a chapter on the cosmos' genesis and destruction. αὔξησις and μείωσις are, of course, types of motion in the Aristotelian scheme. They are mentioned as such in a long report on Aristotle in S's chapter on motion at 1.19 (162.22 W.). This latter passage almost certainly derives from Arius Didymus, but we cannot be sure what it replaced. A may have presented more than what is left in P 1.23.2. S's clusters are usually, but not always,<sup>106</sup> presented in the order in which they occur in A. This lemma is placed in between lemmata from P 2.1 and P 2.6. All in all, the present chapter is a plausible location for the lemma and we consider it justified to locate it here.

6. The first diaeresis between millstone-like and wheel-like motion is quite puzzling. One might think of a distinction between two kinds of circular motion, i.e. in a horizontal and in a vertical plane. But the latter makes no sense for the cosmos. The verb περιδινεῖσθαι suggests motion in a horizontal plane. Moreover the parallel for the earth in P 3.13 indicates a circular motion from west to east. So the wagon wheel must be lying on its side. We have found no parallels that shed any light on the distinction. Cleomedes remarks that 'in latitudes below the poles the heavens revolve just like millstones'.<sup>107</sup> Similarly Philoponus refers to the millstone-like motion of the heaven in the context of an observation that the poles of the earth are uninhabited.<sup>108</sup> In another text he speaks of 'the millstone-like placement of the universe' when speaking about the bands of an astrolabe which are placed 'wreath-like' (στεφανοειδῶς) in the hemisphere above the earth.<sup>109</sup> These texts suggest that the image of the millstone properly refers to the heaven rather than the cosmos and illustrates the compacted revolution of the stars in the polar regions of the cosmos, in contrast to the more spread out movement closer to the equator.<sup>110</sup> We note, however, that both authors do not contrast this motion to any other.

<sup>106</sup> Exceptions, for example, at 1.21.6c, 1.24.1k, 1.24.1l, 1.25.1d, 1.25.1g.

<sup>107</sup> *Cael.* 1.4.138 Todd; translation Bowen–Todd (2004) 58.

<sup>108</sup> *In Gen. et corr.* 14.2, 291.16.

<sup>109</sup> *De usu astrol.* 131.24.

<sup>110</sup> Another possible *tertium comparationis* in the case of millstones is that one stone stands still, the other moves in a circle.



Diels (*DG* 46, 329) proposed that the doxai belonged to Anaximenes and Anaximander respectively. But he only included the former in his *VS* and the most recent editor of Anaximenes has not included it.<sup>111</sup> It is unlikely that A originally gave name-labels, for then S would not have left it out.

If the Stoic lemma belongs to this chapter, then an entirely different kind of motion must be added, involving expansion and contraction from the centre outwards and back again. The Stoics deny that this actually involves increase and diminution, because the amount of ὕλη involved is constant.<sup>112</sup> So motion (i.e. change) in any Aristotelian sense is denied. But of course expansion and contraction must involve some kind of change or motion.

7. The reconstruction of the contents of this chapter is necessarily hypothetical on account of its defective transmission. Nevertheless the evidence does suggest a structure involving two diaereses. The first is between circular motion and inward/outward motion. The second is between two kinds of circular motion as illustrated by the images of a millstone and a wheel. Even if we are not sure what the distinction refers to, some kind of distinction is certainly being made.

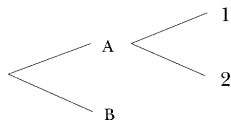
8. There are very few dialectical–doxographical parallels in the strict sense. The subject of the cosmos' spherical motion is closely related to its spherical shape, so they are often mentioned together and/or treated in sequence, e.g. by Aristotle, Euclid, Posidonius etc. (and see also the example of Pliny cited above). Aristotle distinguishes two types of motion at *Cael.* 2.8 290a10, but these are applied dialectically to the stars. The diaeresis in the *Divisiones Aristoteleae* is a closer parallel. It distinguishes between qualitative motion (which includes increase) and circular non-local motion, using both a wheel and the cosmos as examples, but no doxai are given. A diaeresis is found in Epicurus, who imagines a universe either revolving or standing still. The only example of this topic being used as a dialectical question known to us is found in the Byzantine grammatical commentator Johannes Doxopatres. It seems to be given as a variant on the more common example of the question of its sphericity (cf. the previous chapter). We note that it refers to the motion of the heaven rather than the cosmos as a whole.

<sup>111</sup> See Wöhrle (1993) 55.

<sup>112</sup> On this doctrine see Hahm (1977) 32 and n. 16.

STRUCTURE (see above sect. 7)

- A circular motion  
 1 like a millstone (= §1)  
 2 like a wheel (= §2)  
 B inward/outward motion (= §3)



RECONSTRUCTED TEXT

⟨β<sup>+</sup>. Περί κινήσεως κόσμου⟩<sup>1</sup>

- 1 οἱ μὲν μυλοειδῶς,  
 2 οἱ δὲ τροχου δίκην περιδινεῖσθαι ⟨τὸν κόσμον⟩<sup>2</sup>.  
 3 ⟨οἱ Στωικοὶ⟩<sup>3</sup> μήτε αὐξεσθαι δὲ μήτε μειοῦσθαι τὸν κόσμον, τοῖς  
 δὲ μέρεσιν ὅτε μὲν παρεκτείνεσθαι πρὸς πλείονα τόπον, ὅτε δὲ  
 συστέλλεσθαι.

- 
- 1 coniecimus  
 2 addidimus  
 3 addidimus
- 

§1–; §2 13A12 DK; §3 *SFV* 2.597

2a. On the motion of the cosmos

- 1 Some (declare that) the cosmos moves like a millstone,  
 2 while others (declare that) it whirls in the manner of a wheel.  
 3 The Stoics (declare that) the cosmos neither increases nor diminishes,  
 but with its parts it sometimes extends to a more ample location, while  
 on other occasions it contracts.

DIALECTICAL-DOXOGRAPHIC PARALLELS

**Aristotle** *Cael.* 2.4–5, *cosmos*<sup>3</sup> spherical shape, followed by discussion of its motion; cf. 2.8 290a10, τοῦ δὲ σφαιροειδοῦς δύο κινήσεις εἰσὶ καθ' αὐτό, κύλισις καὶ δίνησις. **Divisiones Aristoteleae** 12 44.8 Mutschmann, διαφερείται ἢ κίνησις εἰς τρία ... ἔστι δὲ ἢ μὲν κατὰ τόπον ... ἢ δὲ κατὰ ἀλλοίωσιν ... ἢ δὲ αὐτὴ καθ' ἑαυτήν, οἷον οἱ τροχοὶ καὶ οἱ ἔμβικες καὶ ὁ κόσμος καὶ ἄλλα τοιαῦτα. **Epicurus** *ap.* D.L. 10.88, κόσμος ἐστὶ περιοχὴ τις οὐρανοῦ ... καταλήγουσα ἐν πέρατι ... ἢ ἐν περιγεγραμμένῳ ἢ ἐν στάσιν ἔχοντι ... **Euclid** *Phaen. Praef.* 6.11 Menge, διὰ δὴ ταῦτα πάντα ὁ κόσμος ἐστὶ σφαιροειδὴς καὶ στρέφεται ὁμαλῶς περὶ τὸν ἄξονα. **Posidonius** *ap.* D.L. 7.140. **Pliny** *NH* 1 (= table of contents), cited above at ch. 1. **Ambrose** *Exam.* 1.1.4, siquidem mundi aestimatione uolubilem rutundum ardentem quibusdam incitatum motibus sine sensu deum conueniat intellegi, qui alieno, non suo motu feratur. **Johannes Doxopates** *Proleg. in Aphth. progymn.* 14.125.18, ἔστι γάρ τινα καὶ ἱατρικὰ ζητήματα ... καὶ φιλόσοφα πάλιν, ὥς ὅτε ζητεῖται, εἰ ὁ οὐρανὸς σφαιροειδῶς κινεῖται.

## Aëtius *Placita* 2.3

Εἰ ἔμψυχος ὁ κόσμος καὶ προνοία διοικούμενος

### WITNESSES

Ps.Plutarch 2.3, Eusebius 15.34, ps.Galen 46, Cyril *c.Jul.* 2.15, Qusṭā  
Ibn Lūqā 2.3  
Stobaeus 1.21.3c, 6a  
Theodoret 4.16, cf. 1.63  
Cf. Achilles 5

### ANALYSIS

1. The subject of the cosmos' motion treated in the previous chapter raises the question of how that motion is caused. The progression to the theme of the cosmos' ensoulment is thus a natural one. The basic question here is whether the cosmos is a living being (ζῶον), or not.

2. P preserves the following text with three doxai:

- γ'. Εἰ ἔμψυχος ὁ κόσμος καὶ προνοία διοικούμενος
- P2.3.1 οἱ μὲν ἄλλοι πάντες ἔμψυχον τὸν κόσμον καὶ προνοία διοικούμενον.
- P2.3.2 Δημόκριτος δὲ καὶ Ἐπίκουρος καὶ ὅσοι τὰ ἄτομα εἰσηγοῦνται καὶ τὸ κενὸν οὔτ' ἔμψυχον οὔτε προνοία διοικεῖσθαι, φύσει δὲ τινι ἀλόγῳ.
- P2.3.3 Ἀριστοτέλης οὔτ' ἔμψυχον ὅλον δι' ὅλων, οὔτε μὴν αἰσθητικὸν οὔτε λογικὸν οὔτε νοερὸν οὔτε προνοία διοικούμενον· τὰ μὲν γὰρ οὐράνια τούτων ἀπάντων κοινωνεῖν, σφαίρας γὰρ περιέχειν ἔμψυχους καὶ ζωτικὰς, τὰ δὲ περὶ γαίης μηδενὸς αὐτῶν, τῆς δ' εὐταξίας κατὰ συμβεβηκὸς οὐ προηγουμένως μετέχειν.

Of the subsidiary witnesses E omits the first lemma. This is most unexpected, especially since it means that he misses the main διαφωνία, which he emphasized in the introductory words at *PE* 15.32.8 (2.406.8–9 Mras). He may have felt that its wording was too similar to the chapter heading. Or he may have followed the practice of other Christian sources, which leave out the majority position because it is the same as their own (see texts below). G paraphrases and makes significant alterations to the last two lemmata, e.g. changing the final words of

the Aristotelian doxa from κατὰ συμβεβηκός οὐ προηγουμένως μετέχειν το μετεिल्φέναι μήτε προηγουμένως μήτε κατὰ συμβεβηκός. He shares a shorter title without the second subject with some mss. of P, but there can be no doubt that A had the longer title. Cyril is the most faithful witness. He agrees with E (but not Q) in omitting οὔτε μὴν αἰσθητικόν in the final doxa (G has αἰσθητόν only). We shall discuss this variant further in sect. 9 below.

3. In S the material from this chapter is found in 1.21. A clear reference to A's title is made in the chapter's heading, which, as we saw in our analysis of ¶1, is a composite of the headings of A 2.1, 2.3, 2.5a\* and 2.5. After citing a cluster of Stoic material from 2.1, 2.4. and 2.6, S quotes the first two lemmata, which contain the main diaeresis:

- 1.21 title    Περί κόσμου καὶ εἰ ἔμψυχος καὶ προνοία διοικούμενος καὶ ποῦ ἔχει τὸ ἡγεμονικὸν καὶ πόθεν τρέφεται
- 1.21.3C
- S1            οἱ μὲν ἄλλοι πάντες ἔμψυχον τὸν κόσμον <καὶ> προνοία διοικούμενον.
- S2            Λεῦκιππος δὲ καὶ Δημόκριτος καὶ Ἐπίκουρος οὐδέτερα τούτων, φύσει δὲ ἀλόγῳ ἐκ τῶν ἀτόμων συνεστῶτα.

The first lemma is thus identical to what we find in P, but the second adds the name-label of Leucippus at the beginning and differs from P in the wording of the doxa, with only the words φύσει δὲ ἀλόγῳ held in common. S then continues with an excerpt on Homeric cosmology which shows similarities to what we find in ps.Plutarch's *Vita Homeri* (§4),<sup>113</sup> followed by a long Chrysippean excerpt from AD on the cosmos (§5). He then continues with material from our chapter:

- 1.21.6ab
- S3            Ἐκφαντος ἐκ μὲν τῶν ἀτόμων συνεστάναι τὸν κόσμον, διοικεῖσθαι δὲ ὑπὸ προνοίας.
- S4            Ἀριστοτέλης οὔτ' ἔμψυχον ὅλον δι' ὅλου, οὔτε λογικὸν οὔτε νοερὸν οὔτε προνοία διοικούμενον· τὰ μὲν γὰρ οὐράνια πάντων τούτων κοινωνεῖν, σφαίρας γὰρ περιέχειν ἔμψυχους καὶ ζωτικὰς, τὰ δὲ περιγεία μηδενὸς αὐτῶν, τῆς δ' εὐταξίας κατὰ συμβεβηκός, οὐ προηγουμένως μετέχειν.

There can be no doubt that the additional Ecphantus lemma belongs to our chapter. The text of the fairly long Aristotelian doxa differs

<sup>113</sup> Attributed by Diels *DG* 852 to ps.Plutarch (cf. 88–99) and taken over by Wachsmuth.

only marginally from what we found in P (but see further below). It would appear that S has preserved the order of the lemmata in A, but obscured its systematics by interposing other material. It is difficult to detect any sophistication in his arrangement.

4. T perceives the main disjunction, but paraphrases with extreme concision. His text continues from the passage quoted for ¶2a:

*GAC* 4.16, 104.17–18

T1 καὶ οἱ μὲν ἔμψυχόν τε καὶ ἔμπνουν,  
T2 οἱ δὲ παντάπασιν ἄψυχον·

We may compare another text at 1.63, where he argues that those who follow the doxai of the philosophers, using πίστις as their guide, differ in what they espouse, as can be learnt from the differences in doctrine. One of the examples he gives is (21.7–8): καὶ οἱ μὲν ἔμψυχόν εἶναι τὸ πᾶν, οἱ δὲ ἄψυχον. The subject of providence is omitted in Book IV, no doubt because he has much more expansive plans for Book VI, where at §6–7 he gives an expanded version (with name-labels) of his doxography in *Prov.* (cited below), related to but not identical with what is found in A. T's compact paraphrase is of interest because he makes explicit the contrast between ensouled and not ensouled, which is only implicit in A. As we shall see, this insight makes the structure of the chapter more transparent.

5. Ach contains no doxography on the subject of this chapter, only affirming that the cosmos is a ζῶον as part of his chapter on the οὐσία of the heaven (35.3 Maass ~ 14.3 Di Maria). We note, however, that the next paragraph immediately follows with the subject of the cosmos' food (35.15 Maass ~ 14.13 Di Maria, see further on ¶5). This is perhaps a hint that the question of whether the cosmos was ensouled or not (i.e. a living being) was present in the doxographical material he was using for his compendium.

6. Our witnesses thus yield only four lemmata for this chapter, but there is no reason to think it is not complete. The order in P corresponds to that in S, except the additional Ecphantus doxa. As noted above, there is little doubt that S preserves the order of the doxai in his source.

We have here another example of a systematic structure presented with great concision. As in ¶1 two subjects are combined. This time, however, the two subjects are both indicated in the title. The for-

mer asks whether the cosmos is ensouled or ‘unsouled’, the second whether it is governed by providence. As we shall see below, both themes are regularly mentioned as the subjects of *θέσεις* or *quaestiones*. In the Stoic doxography at D.L. 7.133, which presents the subjects belonging to physics, both topics are mentioned virtually together (see the text below; the five topics mentioned in this passage can be related to A 2.1, 2.3, 2.4, 2.3 and 2.4).

As in ¶1, therefore, it is possible to put together a schema of possible solutions to the two *quaestiones* as follows (where ‘natural’ stands for the non-providential option in the second *quaestio*).

cosmos	A ensouled or B not-ensouled	
1 providential	A1 ensouled providential	B1 not-ensouled providential
or		
2 natural	A2 ensouled natural	B2 not-ensouled natural

As in ¶1, three of the four options are well-represented. The chapter starts with an opposition between the positions A1 and B2. The formula οἱ μὲν ἄλλοι πάντες ... Λεύκιππος δέ κτλ used to express these views indicates a majority–minority division of opinion (cf. P 1.14 Περί κενού, which has a rather similar structure). The opposition is consistent with the main lines of demarcation already set out in the first two chapters. As in ¶2 A focuses on the atomists as the main representatives of the alternative view. The view of Ecphantus clearly approximates B1, though by implication rather than explicitly expressed. In his physics he follows the atomists, but nevertheless he regards the cosmos as providentially administered. We would be interested in knowing more about how this takes place, but the doxa is too concise to satisfy our curiosity on this point. But in the doxography presented by Hippolytus (*Ref.* 1.15, = 51.1 DK, also edited at Diels *DG* 566.11–19) we find the following explanation: κινεῖσθαι δὲ τὰ σώματα (= τὰ πρῶτα ἀδιαίρετα) μήτε ὑπὸ βάρους μήτε πληγῆς, ἀλλ’ ὑπὸ θείας δυνάμεως, ἣν νοῦν καὶ ψυχὴν προσαγορεύει. If this parallel is taken seriously, we can hardly maintain that according to Ecphantus the cosmos is not ensouled. So all the doxa does is combine atomist physics and non-atomist theology.

One of the four possibilities remains, i.e. A2, that the cosmos is ensouled but not providentially administered. No doxa is given for this position in its pure form (cf. A 2.1, where the fourth view was also not represented). Instead an Aristotelian view is given, in which a division

is made between the heavens, for which the majority position obtains, i.e. the heavenly bodies are ensouled and possess providence, and the earth, for which this is not the case. This fourth view can be seen as a kind of compromise between A<sub>1</sub> (for the heavens) and B<sub>2</sub> (for the earth). It is consistent with a limited doxographic tradition, mainly found in the Church fathers, in which Aristotle is credited with the view that providence only extends to the heavenly realm.<sup>114</sup> The view A<sub>2</sub>, that the cosmos is ensouled but not providentially administered, is seen as self-contradictory in a piece of anti-philosophical polemic directed against Aristotle and the Peripatetic school at Clement *Protr.* 66.4.<sup>115</sup>

7. In terms of its structure, therefore, the chapter is dominated by the opposition between the first two doxai (in terms of our schema between +A+B and –A–B) as indicated by means of type A diaeresis. The third and fourth doxai follow on from this basic position and should be seen as additions that present compromise positions.<sup>116</sup> In the one case atomist physics is combined with the non-atomist view that the cosmos is providentially administered, i.e. –A+B. In the other case ensoulment and providential engagement are limited to the heavens and not conceded to the earthly realm, i.e. partially +A+B, partially –A–B. Because these views mediate between the extremes of the main diaeresis, the chapter's structure in its totality amounts to a type B diaeresis.

8. The list of dialectical-doxographical parallels below indicates very clearly that the two themes dealt with in this chapter were regarded as important topics of philosophical debate. The subject of whether the cosmos is ensouled is casually given as an example of (useless) philosophical debate by Demonax in a diatribe cited by Stobaeus. We might compare the θεῖς given by A as an example in the Preface to Book I (in P), εἰ ζῶον ἢ μὴ ζῶον ὁ ἥλιος, which asks the same question of the sun. Various texts show that the question whether the cosmos is a living being was a subject on which philosophers took a stand against each other (see the texts in Diogenes Laertius, Philo

<sup>114</sup> On this tradition see the texts collected in Bos (1976) 29 n. 1, Runia (1989) 5–12. The doxa on partial providence is also found in the early doxography at D.L. 5.32, but there it is combined with a different theology (God as ἀσώματος).

<sup>115</sup> Other 2nd cent. CE texts that emphasize that the cosmos as a whole is ensouled are Athenagoras *Leg.* 6.3, 25.2; Hippolytus *Ref.* 1.20.6 (no mention of providence here, but cf. 7.19.2, 7).

<sup>116</sup> See also the discussion of this text in Part I sect. 1.

and Plutarch cited below). On the subject of providence there is a huge amount of doxographical material. The most apposite example for our purposes is a text in Marcus Aurelius which refers to ‘the disjunctive (proposition) providence or atoms’, i.e. a summary of the main diaeresis of the chapter in the form of ‘either A or B’. What is striking, however, is that most examples are focused on theology, rather than on cosmology as here in A. For example, Theon gives as one of his chief examples of a philosophical *θείσις* the subject *εἰ προνοοῦσι θεοὶ τοῦ κόσμου*. We note also the enchained diaereses in Epictetus and Theodoret (cited below), in which the question of divine providence is coupled with the prior question of whether God/the gods exist at all. In these doxographies the view of partial providence attributed to Aristotle is seen as a compromise between total acceptance and total denial of the role of providence. Various other doxographies, however, couple the views of Epicurus and Aristotle on the question of divine providence, e.g. in the polemical discussion of Atticus. In all these texts the prime focus is on theology. Most interesting for our purposes is the doxography in Origen, which gives what is in a sense a Platonized version of A’s doxography, i.e. the question of providence is coupled with the nature of the Stoic deity, which since it is wholly material and immanent in the cosmos, makes the cosmos—in Platonic terms—corporeal, and not ensouled.<sup>117</sup> In this text Epicurus and Aristotle are coupled, but Aristotle’s offence against piety is less severe, i.e. the same juxtaposition as in A. The combination of cosmology and theology in fact goes back at least to Plato’s influential treatment in *Laws* Book X, where he first argues against the atheists by positing a divine cosmic soul that is responsible for the cosmos’ ordered movement, and then immediately continues the discussion by arguing that the gods are providentially concerned with the cosmos and its human inhabitants.<sup>118</sup>

There are, therefore, two features that set A’s treatment in this chapter apart from most other parallels. Firstly the cosmological focus of

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<sup>117</sup> Parallel text in Lucian *Icar.* 9; cf. also the more indirect or implicit coupling in Cicero, Philo and Augustine. We note also the text at Galen *De med. exper.* 19.2, where bodily juxtaposition (cf. A at P 1.17.2 *κατὰ παράθεσιν*) is coupled to the question of God’s existence and providence.

<sup>118</sup> In other important texts such as the *Timaeus*, however, the ensoulment of the cosmos is not problematized but posited, so we cannot adduce them as dialectical-doxographical parallels.



his treatment of providence. This is, at least in part, the consequence of his division between principles (including theology) in Book I and cosmology in Book II. Secondly his combination of the questions of the cosmos' ensoulment and its providential administration. As noted above, this runs parallel to his method in the opening chapter, but this time the combination of themes is clearly indicated in the chapter's title. It allows a more sophisticated presentation of views, even if they are limited to four only (as far as we can tell). We note that the two themes are found in close proximity in a Stoic summary of questions studied by philosophers (as opposed to astronomers), but they are separated by the question of whether the cosmos is generated or not, i.e. at least part of the subject of A's next chapter (D.L. 7.133, text below).<sup>119</sup>

9. We end our analysis with a textual question. Diels *DG* 16 argued that the words in the Aristotelian lemma οὐτε μὴν αἰσθητικόν found in mss. of PQ (in G αἰσθητόν) constitute a late interpolation. The absence of these words in the earlier witnesses ESCyril is a strong argument in favour of this view. But it is difficult to see why the words should have been added rather than deleted. We note that in both Achilles §5 (where he discusses the cosmos as ζῶον) and *Vit. Hom.* 105 the Homeric text *Il.* 3.277 (= *Od.* 11.109, 12.323) is cited. Admittedly it refers to the sun, rather than to the cosmos as whole (cf. the θέσις in A cited above). The same verse occurs in a fragment of Aristotle (fr. 903 Gigon, Proclus via Olympiodorus), in which it is argued that the οὐράνια have only sight and hearing.<sup>120</sup> In the doxography this view may have been transferred to the cosmos as a whole. All in all we think it wisest to retain these words in our text.

STRUCTURE (see above sect. 7)

Main diaeresis

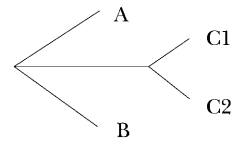
A cosmos ensouled, with providence (= §1)

B cosmos 'unsouled', no providence (= §2)

Compromise positions

C1 Atomist physics but with providence (= §3)

C2 heavens with providence, earth without (= §4)



<sup>119</sup> See further the discussion in Part I sect. 7 at n. 224.

<sup>120</sup> Fr. 903 Gigon = Proclus cited by Olympiodorus in *Phd.* 4.8–9, 85.1–20 Westerink.

## RECONSTRUCTED TEXT

γ'. Εἰ ἔμψυχος ὁ κόσμος καὶ προνοία διοικούμενος<sup>1</sup>

- 1 οἱ μὲν ἄλλοι πάντες ἔμψυχον τὸν κόσμον καὶ προνοία διοικούμενον.
- 2 Λεύκιππος<sup>2</sup> δὲ καὶ Δημόκριτος καὶ Ἐπίκουρος καὶ ὅσοι τὰ ἄτομα εἰσηγούνται καὶ τὸ κενὸν οὐτ' ἔμψυχον οὔτε προνοία διοικεῖσθαι, φύσει δὲ τινι ἀλόγῳ<sup>3</sup>.
- 3 Ἐκφαντος ἐκ μὲν τῶν ἀτόμων συνεστάναι τὸν κόσμον, διοικεῖσθαι δὲ ὑπὸ προνοίας.
- 4 Ἀριστοτέλης οὐτ' ἔμψυχον ὅλον δι' ὅλων<sup>4</sup>, οὔτε μὴν αἰσθητικὸν<sup>5</sup> οὔτε λογικόν<sup>6</sup> οὔτε νοερὸν οὔτε προνοία διοικούμενον· τὰ μὲν γὰρ οὐράνια τούτων πάντων<sup>7</sup> κοινωνεῖν, σφαίρας γὰρ περιέχειν ἔμψυχους καὶ ζωτικὰς, τὰ δὲ περὶ γαίης μηδενὸς αὐτῶν, τῆς δ' εὐταξίας κατὰ συμβεβηκόσιν οὐ προηγουμένως μετέχειν.

1 καὶ ... διοικούμενος om. P<sup>2</sup>G

2 Λεύκιππος δὲ καὶ Δημόκριτος καὶ Ἐπίκουρος S, Δημόκριτος δὲ καὶ Ἐπίκουρος P

3 καὶ ὅσοι ... ἀλόγῳ PQ, S οὐδέτερά τούτων, φύσει δὲ ἀλόγῳ ἐκ τῶν ἀτόμων συνεστῶτα (cf G)

4 ὅλου SG Diels

5 οὔτε μὴν αἰσθητικὸν PQ (αἰσθητόν G), om. ESCyril

6 οὔτε λογικόν om. Q

7 πάντων ESGCyril Diels, ἀπάντων P

§1–; §2a 67A22 DK; §2b fr. 23, 589 Luria; §2c fr. 382 Usener; §3 51.4 DK; §4 T19 Gigon

3. Whether the cosmos is ensouled and administered by providence

- 1 All other (philosophers declare that) the cosmos is ensouled and administered by providence.
- 2 But Leucippus and Democritus and Epicurus and those who introduce atoms and the void (declare that) it is neither ensouled nor administered by providence, but rather by an unreasoning natural force.
- 3 Ecphantus (declares that) the cosmos is composed of atoms, but is (nevertheless) administered by providence.
- 4 Aristotle (declares that the cosmos is) neither ensouled through and through, nor is it endowed with sense-perception nor is it rational or intellectual or administered by providence. The heavenly realm in fact shares in all these (characteristics), for it contains ensouled spheres which are endowed with life. The earthly realm, however, (shares) in none of them, but possesses its well-ordered state contingently and not primarily.

## DIALECTICAL-DOXOGRAPHIC PARALLELS

**Plato** *Phil.* 30a–b, *Lg.* 889c, 895a–905c. **Aristotle** *Cael.* 2.2 285a30. **Stoics** *ap.* D.L. 7.133, ἑτέραν δ' αὐτοῦ (κόσμου) σκέψιν εἶναι ἥτις μόνοις τοῖς φυσικοῖς ἐπιβάλλει, καθ' ἣν ζητεῖται ἥ τε οὐσία αὐτοῦ καὶ εἰ γεννητός ἢ ἡ ἀγέννητος καὶ εἰ ἔμψυχος ἢ ἄψυχος καὶ εἰ φθαρτός ἢ ἀφθαρτος καὶ εἰ προνοία διοικεῖται ...; 7.142–143, ὅτι δὲ καὶ ζῶν ὁ κόσμος καὶ λογικὸν καὶ ἔμψυχον καὶ νοερὸν καὶ Χρύσιππος ... καὶ Ἀπολλόδωρος (φησὶν) ... καὶ Ποσειδώνιος ... Βόηθος δὲ φησὶν οὐκ εἶναι ζῶν τὸν κόσμον (cf. **Philodemus** *Piet.* 545.27–28 Diels, also ed. Schober *CronErc* 18 (1988) 118 = *SVF* 2.1076). **Lucretius** 5.110–165. **Cicero** *N.D.* 1.18, audite non futilis commenticiasque sententias ..., nec anum fatidicam Stoicorum πρόνοιαν ..., neque vero mundum ipsum animo et sensibus praeditum ...; cf. 1.23, *Ac.* 2.119–121. **Philo** *Prov.* 1.22, nec tamen ut alii quidam sapientum, animal esse mundus censendus est (cf. 2.45); *Ebr.* 199, οἱ χωρὶς ἐπιστάτου καὶ ἡγεμόνος ἀλόγου καὶ ἀπαντοματιζούσης ἐξάπαντες φορᾶς τοῖς ὑπολαμβάνουσι πρόνοιαν καὶ ἐπιμέλειαν ὅλου καὶ τῶν μερῶν θαυμαστήν τιν' εἶναι ἡνιοχοῦντος καὶ κυβερνῶντος ἀπταιστώσας καὶ σωτηρίως θεοῦ. **Plutarch** *Adv. Col.* 1115b, Στράτων οὐτ' Ἀριστοτέλει κατὰ πολλὰ συμφέρεται καὶ Πλάτῳ τὰς ἐναντίας ἔσχηκε δόξας περὶ κινήσεως ... καὶ τελευτῶν τὸν κόσμον αὐτὸν οὐ ζῶν εἶναι φησι, τὸ δὲ κατὰ φύσιν ἔπεσθαι τῷ κατὰ τύχην ... **Quintilian** *Inst. Or.* 7.2.2 ut in generalibus 'an atomorum concursu mundus sit effectus, an providentia regatur ...' **Galen** *De exper. med.* 19.2–3 Walzer; *De locis affectis* 3.5 8.159.3 Kühn; *De plac. Hp. et Pl.* 9.7.9 cited below on ch. 4. **Lucian** *Icar.* 9, εἴτα καὶ προνοεῖν τῶν καθ' ἡμᾶς πραγμάτων οὐ πᾶσιν ἐδόκουν οἱ θεοί, ἀλλ' ἡσάν τινες οἱ τῆς συμπάσης ἐπιμελείας αὐτοὺς ἀφιέντες ... ἔνιοι δὲ ταῦτα πάντα ὑπερβάντες οὐδὲ τὴν ἀρχὴν εἶναι θεοῦς τινος ἐπίστευον, ἀλλ' ἀδέσποτον καὶ ἀνηγεμόνευτον φέρεσθαι τὸν κόσμον ἀπελίμπανον; cf. *Zeus trag.* 17, 35. **Theon** *Progymn.* 11 91.5 Patillon-Bolognesi (example of a θέσις), ἔστω δ' οὖν ἡμᾶς ζητεῖν, εἰ προνοοῦσι θεοὶ τοῦ κόσμου (followed by two pages of sample arguments). **Demonax** *ap.* Stob. *Ecl.* 2.1.11 5.10–13 Wachsmuth, ἐξεταζόντων τινῶν, εἰ ὁ κόσμος ἔμψυχος ... (rest of text cited above on ch. 2). **Epictetus** 1.12.1–2, περὶ θεῶν οἱ μὲν τινὲς εἰσιν οἱ λέγοντες μηδ' εἶναι τὸ θεῖον, οἱ δ' εἶναι μὲν, ἀργὸν δὲ καὶ ἀμελὲς καὶ μὴ προνοεῖν μηδενός, τρίτοι δ' οἱ καὶ εἶναι καὶ προνοεῖν, ἀλλὰ τῶν μεγάλων καὶ οὐρανίων, τῶν δ' ἐπὶ γῆς μηδενός· τέταρτοι δὲ οἱ καὶ τῶν ἐπὶ γῆς καὶ τῶν ἀνθρωπίνων, εἰς κοινὸν δὲ μόνον καὶ οὐχὶ κατ' ἰδίαν ἐκάστον· πέμπτοι δ', ὧν ἦν καὶ Ὀδυσσεὺς καὶ Σωκράτης ... **Marcus Aurelius** *Medit.* 4.3.2, ἀνανεωσάμενος τὸ διεξυγμένον τό· ἦτοι πρόνοια ἢ ἄτομοι, καὶ ἐξ ὧσων ἀπεδείχθη ὅτι ὁ κόσμος ὥσανει πόλις; 6.10 ἦτοι κυκεὼν καὶ ἀντεμπλοκὴ καὶ σκεδασμὸς ἢ ἔνωσις καὶ τάξις καὶ πρόνοια, cf. 4.27, 9.28, 12.14. **Alexander of Aphrodisias** *ap.* Simp. in *Cael.* 467.16 (on Aristotle's doctrine of providence). **Sextus Empiricus** *PH* 1.151 δογματικὰς δὲ ὑπολήψεις ἀλλήλαις ἀντιτίθεμεν, ὅταν λέγωμεν ... τοὺς μὲν προνοία θεῶν διοικεῖσθαι τὰ καθ' ἡμᾶς, τοὺς δὲ ἀπρονοήτως; cf. 1.32, 222, 3.11. **Origen** *C. Cels.* 1.21, ὡς εἶθε καὶ Ἐπίκουρος καὶ ὁ ἑλαττων αὐτοῦ εἰς τὴν πρόνοιαν ἀσεβῶν Ἀριστοτέλης καὶ οἱ σῶμα εἰπόντες τὸν θεὸν Στωϊκοὶ τοῦ λόγου τούτου (of Moses) ἠκούσαν· ἵνα μὴ πληρωθῇ ὁ κόσμος λόγου ἀθετοῦντος πρόνοιαν ἢ διακόπτοντος αὐτὴν ἢ ἀρχὴν φθαρτὴν εἰσάγοντος τὴν σωματικὴν,

καθ' ἣν καὶ ὁ θεὸς τοῖς Στωϊκοῖς ἐστὶ σῶμα ... **Plotinus** *Enn.* 3.2.1.1–10 (treatise *Περὶ προνοίας*). **Lactantius** *De ira Dei* 1.9–10. **Ambrose** *De officiis* 1.13.47–50. **Nemesius** *De nat. hom.* 43 125.19 Morani, *Περὶ τοῦ τίνων ἐστὶ πρόνοια* (full doxography including views of Plato, Stoa, atomists, Aristotle, Euripides and Menander). **Sopater** *Schol. Ad Hermog.* Status V p. 3.2 Waltz, φιλόσοφον οὖν τὸ ζήτημα, ζητοῦμεν γὰρ, εἰ κύκλος ὁ κόσμος, καὶ εἰ ὁ κόσμος ζῶν. **Augustine** *C. Ac.* 3.23, item scio mundum istum nostrum, aut natura corporum, aut aliqua providentia sic esse dispositum; *C.D.* 18.41, alii (mundum) mente divina, alii fortuito et casibus agi. **Theodoret** *CAG* 6.6–7, τοὺς μὲν οὖν ἀμφὶ τὸν Διαγόραν φασὶν ἀθέους ἐπὶ κλην ὀνομασθῆναι διὰ τὸ πάμπαν ἀρνηθῆναι τὸ θεῖον· Πρωταγόραν δὲ ἀμφίβολον περὶ γε τούτων ἐσχηκέναι λέγουσι δόξαν· φάναι γὰρ αὐτὸν εἰρήκασιν οὐκ εἰδέναι, οὔτε εἴπερ εἰσὶ θεοί, οὔτε εἰ παντάπασιν οὐκ εἰσίν. Ἐπίκουρος δὲ ὁ Νεοκλέους καὶ ἡ ἐκείνου ξυμμορία εἶναι μὲν ἔφασαν τὸν Θεόν, πρὸς αὐτὸν δὲ ἀπεστράφθαι καὶ μῆτε ἔχειν πράγματα μῆτε παρέχειν ἄλλοις ἐθέλειν. ὁ δὲ γε Νικομάχου μέχρι σελήνης ὑπείληφε τὸν Θεὸν πρυτανεύειν, τῶν δὲ μετὰ ταύτην ἀπάντων ἡμεληκέναι καὶ τῇ τῆς εἰμαρμένης ἀνάγκῃ παραδεδωκέναι τὴν τούτων ἐπιτροπείαν, καὶ οὐ μόνον πλοῦτον καὶ πενίαν καὶ ὑγίειαν καὶ νόσον καὶ δουλείαν καὶ ἐλευθερίαν καὶ πόλεμον καὶ εἰρήνην διανέμειν ἀνθρώποις, ἀλλὰ καὶ ἀρετὴν καὶ κακίαν ἀποκληροῦν; cf. *Prov.* 1 PG 83.560b (similar, but without name-labels), καὶ οἱ μὲν, μηδὲ εἶναι παντελῶς τὸ θεῖον· οἱ δέ, εἶναι μὲν, οὐδενὸς δὲ τῶν ὄντων ἐπιμελεῖσθαι· οἱ δέ, ἐπιμελεῖσθαι μὲν ἔφασαν, σμικρολόγως δὲ τοῦτο ποιεῖν, καὶ τῇ σελήνῃ περιορίζειν τὴν πρόνοιαν, τὸ δὲ λοιπὸν τοῦ κόσμου μέρος ὥς ἔτυχε φέρεσθαι, τῇ τῆς εἰμαρμένης ἀνάγκῃ δουλεύειν ἡναγκασμένον. **Simplicius** *in Cael.* 13.2–3.

Aëtius *Placita* 2.4  
Εἰ ἀφθαρτος ὁ κόσμος

WITNESSES

Ps.Plutarch 2.4, Eusebius 15.35, ps.Galen 47, Cyril *c. Jul.* 2.15, Qusṭā  
Ibn Lūqā 2.4  
Stobaeus 1.20.1cf, 21.6cf  
Theodoret 4.16, cf. 1.63, 4.68  
Cf. *Dox. Pasq.* XV

ANALYSIS

1. A now turns to the philosophical question that is most often raised in relation to the cosmos, i.e. what is its genesis (or where did it come from) and will it endure forever? The title of the chapter only mentions the latter topic, but it soon emerges that both subjects are covered. The questions can be treated both in relation to time (temporal beginning or no beginning at all, future destruction or indestructibility) or causation (genesis by means of a cause or spontaneous). Again we shall see that both aspects are dealt with. The subject of the cosmos' genesis has already been raised by A at P 1.4 Πῶς συνέστηκεν ὁ κόσμος, in which the origin of the cosmos is described at some length in atomist terms.<sup>121</sup> There is also an obvious link with the chapter Περί γενέσεως καὶ φθορᾶς (= P 1.24), as noted by S.<sup>122</sup> That chapter treats the subject of generation and decay in general terms, but cannot avoid reference to the universe/cosmos on two occasions (§1 τὸ πᾶν, §2 κοσμοποιούσι). We note too that there is a parallel chapter for living beings as microcosms, P 5.19 Περί ζώων γενέσεως, πῶς ἐγένοντο ζῶα, καὶ εἰ φθαρτά (in which the first two doxai in P in fact allude to the question whether the cosmos is γενητός).

The present chapter has proved one of the most difficult in the entire book to reconstruct. The reason is at least twofold. The question of

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<sup>121</sup> On this chapter see Part I sect. 2 text at nn. 30–32, and in sect. 10 (on the important parallel in Ach). We argue that this chapter has been integrated into the introductory part of the compendium and is not just an alien intrusion as Diels thought.

<sup>122</sup> On this chapter see the analysis of Mansfeld (2002a).

the genesis and destruction of the cosmos is such a standard topic in doxographical literature that it was very tempting and easy for P and others to introduce their own modifications and adaptations. Moreover S has scattered his material even more than usual. The result is that we have had to introduce more speculative elements into our reconstruction than we might wish. Nevertheless the task of trying to determine how A compiled and organized his chapter will prove to be a most instructive exercise.<sup>123</sup>

2. The text in P reads as follows:

δ'. Εἰ ἀφθαρτος ὁ κόσμος

- P2.4.1 Πυθαγόρας καὶ οἱ Στωικοὶ γενητὸν ὑπὸ θεοῦ τὸν κόσμον· καὶ  
φθαρτὸν μὲν ὅσον ἐπὶ τῇ φύσει, αἰσθητὸν γὰρ εἶναι διότι καὶ  
σωματικόν, οὐ μὴν φθαρησόμενόν γε προνοίᾳ καὶ συνοχῇ θεοῦ.  
P2.4.2 Ἐπικουρος φθαρτὸν, ὅτι καὶ γενητὸν, ὥς ζῶν ὥς φυτὸν.  
P2.4.3 Ξενοφάνης ἀγένητον καὶ αἰδίδιον καὶ ἀφθαρτον τὸν κόσμον.  
P2.4.4 Ἀριστοτέλης τὸ ὑπὸ τὴν σελήνην τοῦ κόσμου μέρος παθητὸν, ἐν ᾧ  
καὶ τὰ περίγεια κηραίνεται.

P thus presents a compact list of four doxai. It starts with a surprise because, although the subject in the title concerns the cosmos' destructibility, the first doxa begins by speaking about its creation by God, before turning to the familiar Platonic doctrine of its conditional indestructibility. But according to the mss. of P this doctrine is attributed to Pythagoras and the Stoics, not to Plato. Clearly, odd things have happened to this chapter.

E writes out the chapter in full and records one very significant variant: he adds the name-label Plato to the first doxa in the order Pythagoras–Plato–the Stoics. The same name-label is also recorded by G in his paraphrase, but he deletes the Stoics. Cyril and Q follow P in having just the two names. So we have the following result:

P	Pythagoras and the Stoics
E	Pythagoras and Plato and the Stoics
G	Pythagoras and Plato
Cyril	Pythagoras and the Stoics
Q	Pythagoras and the Stoics

Diels *DG* 11, followed by the later editors Mau and Lachenaud, thought that E preserved the right reading here as far as P (but, note well, not

<sup>123</sup> A preliminary version of our analysis and reconstruction has been published in Runia (2005).

A) is concerned. Given the additional evidence supplied by S (to be examined below), they are probably right, though the matter cannot be settled beyond all dispute. The grounds for doubt lie in the fact that intervention can so easily occur in the case of this well-known doxa. For P, writing in the 2nd century, Pythagoras can ‘cover’ Plato, while both E and G were capable of adding the Platonic name-label on recognizing the authentically Platonic view. Indeed G transfers the Stoic name-label to the second doxa, an understandable move no doubt based on his own knowledge. Cyril also paraphrases to a limited degree, but preserves the four positions in P accurately. We note that for Epicurus he uses γεννητός (begotten) rather than γενητόν (generated) and for Xenophanes ἀγέννητον, but little significance should be attributed to these changes. More interestingly, in a marginal note of a minor manuscript of P (Ambr. 859) the title is given as εἰ γεννητός ὁ κόσμος ἢ ἀγέννητος· εἰ φθαρτός ἢ ἀφθαρτος. Here an intelligent scribe has perceived that the traditional title does not cover the contents very well.

3. S has divided the equivalent of P’s 2.4 between his ch. 20 and ch. 21. In order to understand what he has done we will have to subject these chapters to detailed scrutiny.

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|------------|--|
| 1.20 title | Περὶ γενέσεως καὶ φθορᾶς   |
| 1.20.1a    | first lemma from A 1.24 (cf. P 1.24.1): Parmenides and Melissus do not accept generation and destruction since the universe is unmovable   |
| 1.20.1b    | contrasting lemma: Heraclitus declares that all is generation since there is no permanence (based on a quotation from Plato <i>Cra.</i> 402a8–10)  |
| 1.20.1c    |  |
| S1         | Πλάτων φθαρτὸν μὲν τὸν κόσμον, ὅσον ἐπὶ τῇ φύσει, αἰσθητὸν γὰρ εἶναι, διότι καὶ σωματικόν, οὐ μὴν φθαρησόμενόν γε προνοία καὶ συνοχῇ θεοῦ.   |
| 1.20.1d    | remaining two lemmata from A 1.24 (cf. P 1.24.2–3): contrast between those who do not posit real generation or destruction (Empedocles–Anaxagoras–atomists) and those who do (Pythagoras etc.) |
| 1.20.1e    | lemma from Arius Didymus relating views of various Stoics on change  |
| 1.20.1f    |  |
| S2         | Ἀριστοτέλης τὸ ὑπὸ τὴν σελήνην μέρος τοῦ κόσμου παθητικὸν ἀπεφαίνεται, ἐν ᾧ καὶ τὰ περίγεια κηραίνεται.  |
| S3         | Ξενοφάνης, Παρμενίδης, Μέλισσος ἀγέννητον καὶ αἰδὶον καὶ ἀφθαρτον τὸν κόσμον.  |
| S4         | καὶ οἱ φάμενοι δὲ τὴν διακόσμησιν αἰώνιον ὑπάρχειν περιοδεύ-   |

- τικοὺς εἶναι φασὶ χρόνους, καθ' οὓς κατὰ ταῦτα καὶ ὡσαύτως  
 γίγνεσθαι πάντα καὶ τὴν αὐτὴν διασφύζεσθαι τοῦ κόσμου διάταξιν  
 τε καὶ διακόσμησιν.
- S5 Ἀναξιμανδρος, Ἀναξιμένης, Ἀναξαγόρας, Ἀρχέλαος, Διογένης,  
 Λεύκιππος φθαρτὸν τὸν κόσμον.
- S6 Καὶ οἱ Στωικοὶ φθαρτὸν τὸν κόσμον, κατ' ἐκπύρωσιν δέ.
- S7 Ἐμπεδοκλῆς τὸν κόσμον φθείρεσθαι κατὰ τὴν ἀντεπικράτειαν τοῦ  
 νείκους καὶ τῆς φιλίας.
- S8 Δημόκριτος φθείρεσθαι τὸν κόσμον τοῦ μείζονος τὸν μικρότερον  
 νικῶντος.
- S9 Ἐπίκουρος πλείστοις τρόποις τὸν κόσμον φθείρεσθαι· καὶ γὰρ ὡς  
 ζῶον καὶ ὡς φυτὸν καὶ πολλαχῶς.
- 1.20.1g lemma on Philolaus from A 2.5 (cf. P 2.5.3) etc.

This chapter is the last of the chapters dealing with general topics taken from A's Book I (on bodies, colours, movements etc.). As he also does in his chapters 15 and 17, S mixes general doxai from Book I (i.e. P 1.24) with more specific doxai from Book II (i.e. P 2.4). It thus forms, as it were, a transition to the following chapters (21–27) which deal with cosmology proper. The procedure at the beginning of ¶20 gives us an interesting insight into how S works. He starts with the first lemma (we presume) of A 1.24, the view of the Eleatics that there is no genesis or destruction at all. This leads him to introduce the opposite view attributed to Heraclitus—presumably known to him from his own reading of Plato and Aristotle—that there is nothing else than genesis and destruction, i.e. all is flux.<sup>124</sup> He then turns to Plato's theological correction of Heraclitus: by nature everything that is somatic is destructible, but the creator will not allow the universe to perish. After this the two remaining doxai of 1.24 are cited. The latter speaks about γενέσεις and φθοραί proper, which leads to a brief extract from Arius Didymus about differing Stoic views on whether genesis applies to the universe as a whole.<sup>125</sup> Then follows the long sequence of eight doxai, of which S2, S3 and S9 correspond to doxai in P, but in a different order. The next doxa, equivalent to P 2.5.3, is the last Aëtian excerpt in the chapter.

The sequence of eight doxai is striking and unusual. It is no doubt a case of where S has written out an entire block of text from A. See our analysis of this characteristic of his method in Vol. I:226–231. It

<sup>124</sup> It is also possible that there was a lemma in A that prompted S to make the citation, as suggested by Mansfeld (2002a) 281.

<sup>125</sup> The attribution to Arius Didymus is certain because the first part is also cited by Eusebius, who names him explicitly; see *PE* 15.18.3 and Vol. I:263.



appears that he generally preserves the order of doxai unless he sees an attractive reason for departing from it. We cannot be certain that he preserves the original order of the nine lemmata in A, but this must be our initial assumption. The corollary is that P here must have changed the order.

In his next chapter S continues as follows:

- 1.21 title    Περὶ κόσμου καὶ εἰ ἔμψυχος καὶ προνοία διοικούμενος καὶ ποῦ  
ἔχει τὸ ἡγεμονικὸν καὶ πόθεν τρέφεται
- 1.21.6c  
S10        Πυθαγόρας φησὶ γενητὸν κατ' ἐπίνοιαν τὸν κόσμον, οὐ κατὰ  
χρόνον.
- 1.21.6f  
S11        Ἡράκλειτος οὐ κατὰ χρόνον εἶναι γενητὸν τὸν κόσμον, ἀλλὰ κατ'  
ἐπίνοιαν.
- S12        Ἐπίδικος ὑπὸ φύσεως γεγενῆσθαι τὸν κόσμον.
- S13        Ἀρχέλαος ὑπὸ θερμοῦ καὶ ἐμψυχρίας συστήναι τὸν κόσμον.

The title of this chapter, as we have seen, combines the titles of P 2.1, 2.3, 2.5 and the phrase ποῦ ἔχει τὸ ἡγεμονικόν not found in P (on this see ¶5a). It too does not contain a reference to the title used by P at 2.4. There is a clear connection between the first lemma S10 and P 2.4.1, but the precise formulation differs. S11 has a different name-label, but amounts to almost the same doxa. It is plausible to assume that S has split up the two name-labels in order to create his cluster of four Pythagorean doxai in 1.21.6c. Another possibility is that he messed up an original antithesis. The other two doxai S12 and S13 joined up with S11 no doubt also form a little block. They share the use of the prepositional ὑπὸ phrase with P 2.4.1. The other lemmata from this chapter (6de), which Diels placed at the end of his reconstruction of A 2.4, patently do not belong there. We have located them in our reconstruction of ¶5a\*. Finally the Stoic lemma at 1.21.3b, which Diels placed in his reconstruction of 2.4, has been included in our reconstruction of ¶2a.

4. T is unfortunately very brief, but as so often has an eye for essentials. The text continues on from the passage quoted for ¶3:

*GAC* 4.16, 104.18–20

- T1        καὶ οἱ μὲν κατ' ἐπίνοιαν γενητόν, οὐ κατὰ χρόνον,  
T2        οἱ δὲ ἀγένητον παντελῶς καὶ ἀναίτιον·  
T3        καὶ οὗτοι μὲν φθαρτόν,  
T4        ἐκείνοι δὲ ἀφθαρτόν.

He puts forward two disagreements or διαφωνίαι, one on the subject of the cosmos' creation, the other on its destruction, but leaves out all name-labels. The paraphrase, if indeed based on A, makes quite clear that the chapter discussed both the cosmos' genesis and its destruction. The first alternative of conceptual rather than temporal creation is exactly the same phrase as we saw above in S10 and S11 (but is missing in P). It is striking that T does not mention the view that the cosmos is γενητός in absolute terms. He may exclude it, because for him it represents the truth, and so he does not feel the need to attribute it to any of the squabbling philosophers. The phrase ἀγένητον παντελῶς is not found in either P or S, but no doubt refers to the view of Xenophanes–Parmenides–Melissus (S3, cf. P2.4.3). The term ἀναίτιος is also not found in P or S, but it does recall the three prepositional ὑπό phrases in P 2.4.1, S12 and S13. The chiasmic use of οὔτοι and ἐκεῖνοι suggests a correlation between the two disagreements such as we find in P 2.4.1–3 and S5. But T is not interested in the subtleties of the Platonic position as outlined in P 2.4.1. We note that snippets of the same doxography are also found elsewhere in his book:

GAC 1.63, 21.5–6

καὶ τὰ ὀρώμενα οἱ μὲν ἀγένητα, οἱ δὲ γενητά ...

GAC 4.68, 120.7–12

ταῦτα ταῖς τῶν φιλοσόφων, ὧ φίλοι ἄνδρες, παρεξετάσατε δόξαις, καὶ σκοπήσατε, ὀρθῇ γε καὶ δικαίᾳ χρώμενοι ψήφῳ, τίνα τούτων περὶ Θεοῦ λέγειν πρόσφορα καὶ ἄριμόδια, τὸ ἀγένητον εἶναι τὸ πᾶν, ἢ ἀπὸ αὐτομάτου ξυστῆναι, ἢ τὸ ἀπὸ τῶν αὐτόμων καὶ τοῦ κενοῦ ξυναρμωσθῆναι, ἢ τὸ ὑπὸ Θεοῦ μὲν, ἐκ δὲ τῆς ὕλης γενέσθαι ...

In the second text it is combined with theological themes, but the various options of the present doxography can easily be discerned. Clearly its broad contours were very familiar to him.

5. Although Ach has a chapter Περὶ τῆς συστάσεως τῶν ὄλων (cf. A 1.4), he does not discuss the problem of the cosmos' origin in the temporal sense.<sup>126</sup> In the *Dox. Pasq.* scholion XV refers to doxai on the destruction of the cosmos in response to Basil's comment at *Hex.* 1.4 that the philosophers mock Christian views on the end of the world (text cited in parallels below). This doxography is closer to that of Philo to be

<sup>126</sup> On this chapter see Part I sect. 10.

discussed in sect. 7 below. It makes no direct use of material found in A or the *Placita* tradition.

6. Although T can help us with the thought patterns of the chapter, for the details of its doxai we only have the material in P and S at our disposal, in the former case four doxai, in the latter 13 (once the accretions printed by Diels have been removed). Given A's methods, it is of paramount importance to try to determine the original order and organization of the doxai. In this particular case, it is perhaps best to start with Diels and the solution he proposed. He combines the evidence of P and S in his customary double columns as follows:

D <sub>1</sub>	P <sub>1</sub>	S <sub>10</sub>
D <sub>2</sub>	P <sub>1</sub>	S <sub>1</sub>
D <sub>3</sub>	—	S <sub>11</sub>
D <sub>4</sub>	—	S <sub>12</sub>
D <sub>4</sub>	—	S <sub>13</sub>
D <sub>6</sub>	—	S <sub>5</sub>
D <sub>7</sub>	—	S <sub>6</sub>
D <sub>8</sub>	—	S <sub>7</sub>
D <sub>9</sub>	—	S <sub>8</sub>
D <sub>10</sub>	P <sub>2</sub>	S <sub>9</sub>
D <sub>11</sub>	P <sub>3</sub>	S <sub>2</sub>
D <sub>12</sub>	P <sub>4</sub>	S <sub>3</sub>
D <sub>13</sub>	—	S <sub>4</sub>
D <sub>14–17</sub>	—	—

Diels' strategy is clear. He assumes that the epitomator P has preserved the original order in A, so uses P's four doxai as the backbone of his reconstruction. In so doing he had to break up S's eight doxai S<sub>2</sub>–9, which as we saw were very likely copied as a block.

There are a number of other reasons why Diels' reconstruction is unconvincing:

- (1) The combination of name-labels in P<sub>1</sub> (if we accept E's evidence) Pythagoras–Plato–Stoa is plausible for the first half of the doxa, but not for the second. The Platonic view of conditional indestructibility could not be attributed to the Stoa without a mistake being made (unlike the not dissimilar view in S<sub>4</sub>).
- (2) It is also quite unlikely that this compromise view would be the first in the list. It would be more likely that the doxographer would start with the clear view that the cosmos was γενητός and φθαρτός in an absolute sense.
- (3) The Epicurean view in P is unproblematic as such, but how can we explain the discrepancy with the text as given in S<sub>9</sub>?

- (4) As noted above, it is unlikely that the two doxai attributed to Pythagoras and Heraclitus were originally separate, since the view that they present is identical.
- (5) How can we explain that in S<sub>1</sub> the Platonic view only concerns the destruction of the cosmos, not its genesis as in P<sub>1</sub>? It is clear, however, that the second half of the doxa, which is virtually identical in both P and S, must go back to A.
- (6) How can we explain that the doxai of the obscure Epidicus<sup>127</sup> (S<sub>12</sub>) and Archelaus (S<sub>13</sub>) focus on *how* the cosmos came into being (causative aspect) rather than on *the fact* that it did so (temporal aspect)? We note that these doxai seem to be parallel to S<sub>6</sub>–9, which explain *how* the cosmos comes to be destroyed.

7. Fortunately it is possible to solve nearly all these problems, doing justice to the evidence in both P and S in the process, if we take the more general doxographical treatment of this subject into account. From the beginnings of philosophical discussion the theme of the origins of reality had been a topic of dispute. Plato makes this quite clear in the *proemium* of the *Timaeus* (text below). Aristotle mentions it at the beginning of the *Metaphysics* as the culmination of the process in which philosophy progressed from wonderment to the formulation of major problems. He not only mentions it as the subject of a *θέσις*, but his treatment of the question in the *De Caelo* (and perhaps also in his lost exoteric works)<sup>128</sup> lays the foundation for the standard doxographical treatment of the subject. Although there are in fact two separate subjects here, i.e. εἰ ὁ κόσμος γενητὸς ἢ ἀγένητος and εἰ ὁ κόσμος φθαρτὸς ἢ ἀφθαρτος (cf. Aristotle's treatment and also the Stoa at D.L. 7.132), they are usually treated together. The text which best illustrates this is found at Philo *Aet.* 7–19, which can be summarized as follows:<sup>129</sup>

<sup>127</sup> He is only named here in the *Placita*. Diels *DG* 100 n. 1 is non-plussed. A mistake may be suspected (but the name does occur in Photius' list at 155.35 Henry, so it must have been present in the text of S that he had before him). One might be tempted to think of Epictetus, but this would give rise to chronological problems. Ἐπί[δ]ι[κ]τος must be considered out of the question. Compare the strange things that happen with the name Dicaearchus in the witnesses at P 4.2.

<sup>128</sup> If Philo *Aet.* 10–11 has rightly been attributed to the *De philosophia* (fr. 18 Ross).

<sup>129</sup> A similar scheme is also found in a text in Servius' commentary on Vergil (text below). Varro is cited here as an authority. We cannot be sure that he was also its source, as suggested with some hesitation by Diels *DG* 198 n. 1. Diels is right, however, in emending the text to *Plato autem natum at non mori*.

(1a)	+A	+B	many <i>kosmoi</i>	Democritus, Epicurus
(1b)			single cosmos	Stoa
(2)	–A	–B		Aristotle, Ocellus the Pythagorean
(3)	+A	–B		Plato, Hesiod, Moses

where A = subject to γένεσις, B = subject to φθορά.

This is exactly the same kind of schema that we have already encountered in 2.1\* and 2.3\*, in which two questions are combined into a grid. Philo slightly complicates matters by making the sensible distinction between single and multiple *kosmoi*.<sup>130</sup> But there can be no doubt that his schema bears more than a passing resemblance to the scheme that underlies the four doxai in P:

P <sub>1</sub>	+A	–B	Pythagoras–Plato–Stoa
P <sub>2</sub>	+A	+B	Epicurus
P <sub>3</sub>	–A	–B	Xenophanes
P <sub>4</sub>		≈B (exceptional)	Aristotle

The order of presentation in P is less logical than in Philo, but the three main positions are the same. Both ignore the fourth possibility, –A + B, which finds no takers in the philosophical tradition. There are some resemblances in the name-labels (Plato, Epicurus), but also differences, notably in the case of Aristotle, who in Philo represents the eternalist doxa assigned in P to Xenophanes. A further striking parallel lies in the fact that both texts have as their subject εἰ ἀφθαρτος ὁ κόσμος (P as title, Philo at *Aet.* 3), but also take the theme of the cosmos' genesis into account in the systematics of their presentation. The fact that there is so much resemblance between P and this standard doxographical scheme is, we submit, not a coincidence. It is likely that P took the scheme into account when he compressed A's original presentation, and this may account for the discrepancies between P and S.

It is moreover useful to observe that in Quintilian and Galen a direct connection is made between the question of the cosmos' beginning and the *cause* of its coming into being, e.g. God or chance. In Philo the question of efficient cause is also prominent, as it was originally postulated in Plato's *Timaeus* (but not in Aristotle). In Ambrose the question is linked to the further controversy as to whether the cosmos itself is divine (in Philo this is noted only for the eternalist position, cf. *Aet.* 10).

<sup>130</sup> Also found in Augustine *C.D.* 12.12 and, in a different schema, in Simplicius.

8. We now have the material we need for the reconstruction of the chapter as it originally appeared in A.

- (1) We start with the riddle of the opening lemma in P. It partly corresponds to S10 (Pythagoras) and S1 (Plato), but there is no corresponding lemma on the cosmos' genesis in S for the Stoics (S6 concerns only its destruction).<sup>131</sup> Moreover the Platonic lemma also discusses (conditional) destruction only. In addition S has another Heraclitean lemma on the cosmos' genesis (S11). We recall that T starts with an anonymous position, which is the same as that of Pythagoras and Heraclitus in S. It is probable, therefore, that S has split up an original lemma attributing the conceptual genesis to these two Presocratics, and that this lemma opened the chapter. Such an opening is perhaps surprising. One might expect it to begin with the view that the cosmos was *γενητός* in an unqualified sense. This was always the majority position, as Aristotle and other sources emphasize (cf. *De Caelo* 1.10 279b12 *γενόμενον* ... *ἅπαντες εἶναι φασι*, Ambrose *Exam.* 1.1.3 *plurimi*). We might be tempted to suspect, therefore, that A began blandly with *οἱ πλείστοι γενητὸν τὸν κόσμον vel sim.* (if there had been a long list of names, S would not have passed it by). Only one consideration restrains us from including this in the reconstruction, namely that T does not encourage such a reading but begins with the Pythagorean position, as does P.
- (2) It is logical to follow with the doxai of Epidicus (S12) and Archelaus (S13), since they follow on from the Heraclitean lemma and together with it form a small block. As noted above they focus on the *cause* of the cosmos' genesis, namely either by nature or by warmth and ensoulment.<sup>132</sup> It may be safely assumed that a diaeresis between a teleological and mechanistic doctrine of genesis lies behind these doxai.<sup>133</sup> In P's first lemma another cause is given, namely 'the god', but this view is not found in S. In order to explain P's conflation, it may be surmised that a third doxa belonged to this group, namely the Stoic view that the cosmos came into being through the intervention of God (i.e. *ὑπὸ θεοῦ γεγενῆσθαι τὸν κόσμον*),<sup>134</sup>

<sup>131</sup> Of course accuracy is sometimes sacrificed in a drastic abridgement of the original.

<sup>132</sup> Meineke had emended the mss. reading *ἐμψυχίας* to *ἐμψυχρίας* (chilling), and this was accepted by Diels *DG* and Wachsmuth. But it is unnecessary and dubious (the word is not found in extant Greek literature). In *VS* Diels reverts to the mss. reading without comment (it was briefly noted by Kranz in the *Nachträge* to the sixth edition, 2.421.10).

<sup>133</sup> Cf. the lemma on Archelaus' theology at S 1.1.29b 34.16 Wachsmuth: *Ἀρχέλαος ἀέρα καὶ νοῦν τὸν θεόν, οὐ μέντοι зоμοποιὸν τὸν νοῦν*. Note too that the view of genesis by nature and not God is attributed to Straton at Cicero, *Luc.* 121, *Nat. deor.* 1.35, but this is meant as a mechanistic view (in A's chapter on *ἀρχαί* Strato's are precisely *(θεομόν) καὶ ψυχρόν*, at S 1.10.12 124.18 Wachsmuth, not preserved in P).

<sup>134</sup> Cf. Philo's doxography at *Aet.* 8: *οἱ Στωικοὶ ... γενέσεως δ' αὐτοῦ (sc. τοῦ κόσμου) θεὸν αἵτιον, φθορᾶς δὲ μηκέτι θεόν* ... By including the name-label of the Stoics in his first lemma P thus could combine two doxai in A's original chapter.

which S may have left out because the Stoa is amply covered earlier on (20.1e, 21.5). This explanation is somewhat speculative, and other explanations of P's alteration can be given. But we think it sufficiently probable to include it in our reconstruction.<sup>135</sup>

- (3) Nine doxai in S remain, i.e. the Platonic lemma partly corresponding to P1 and the group of 8. Earlier we criticized Diels for splitting up the block rather drastically (so that S2-3-4-5-6-7-8-9 became A12-11-13-6-7-8-9-10). But it is going to be very difficult to retain S's block completely unchanged. And where should the Platonic lemma be placed? It is possible, of course, that it originally had a place among the lemmata of the block, because S often gives his Platonic material special treatment (see Vol. I:265-266). Here, as noted above in sect. 3, he has linked the Platonic lemma S2 to the Heraclitean view based on *Cra.* 402a. Given that it only speaks of the cosmos being φθαρτός, it is likely to have followed on from the two doxai in the block which describe this position, S5-6. Just like the Stoic lemma S6, it gives a conditional view of the cosmos' destructibility. S extracted it from there in order to make the contrast with Heraclitus inspired by his copying out of A 1.24.
- (4) A real headache is posed by the Aristotelian doxa P4 and S2. If the block of 8 lemmata in S is retained, then it is very difficult to explain why A should mention the passibility of part of the cosmos as part of the discussion of its generation before he mentions its eternity. It seems likely, therefore, that it was placed later. Our suggestion would be that it comes *after* the Platonic lemma on the conditional destructibility of the cosmos, which we placed between S6 and S7. It too is a conditional view, admitting passibility (not destructibility) only for the sub-lunary part. There is also a link between the two views because of the doctrine of partial providence attributed to Aristotle and already outlined in A 2.3.4\*. We do, however, have to explain why S removed it from its original place and put it at the head of the block of 8 doxai.<sup>136</sup> Presumably he sees the doctrine of the distinction between the immutable realm of the supra-lunary world and the mutable matter of the sub-lunary world as providing an interesting qualification of the doctrine of the change of the elements put forward at 1.20.1de (note how the final words of 1e are τὴν τῶν ὅλων εἰς πῦρ μεταβολήν).

<sup>135</sup> The fact that there is a second Stoic doxa later on in the chapter (i.e. S6) is not problematic, since views are more important than name-labels, and there are other cases where a name-label is used more than once in a chapter, e.g. Archelaus here, Xenophanes in ¶20, Anaxagoras in 3.2 etc.; see further Runia (1992) 133 n. 71. However, one might adduce a comment of Alexander on Arist. *Cael.* 1.9 278a20 at Simp. in *Cael.* 277.23: λέγει τοίνυν, ὅτι ὁ κόσμος ἢ ὑπὸ δημιουργοῦ γέγονεν ἢ ὑπὸ φύσεως· εἴτε δὲ ὑπὸ δημιουργοῦ, ... εἴτε ὑπὸ φύσεως, ταὐτὸν ἔστι λέγειν. If God and nature amount to the same, the Stoic doxa could be regarded as otiose.

<sup>136</sup> Note the addition of the verb ἀπεφαίνετο by S, a tell-tale sign that he has extracted it from its original context (cf. Vol. I:232).

- (5) The next three doxai S7-8-9 can follow on from the Platonic and Aristotelian lemmata. As earlier in the case of the doxai of Epidicus and Archelaus, there is a shift from an adjective (φθαερός) to a verb (φθείρεσθαι) in order to discuss the process or agent of destruction. Sturz's conjectural addition of (γίνεσθαι καὶ) to the Empedoclean lemma is clearly misguided from the viewpoint of the structure of S's chapter.<sup>137</sup> This additional consideration clearly strengthens O'Brien's attack on the conjecture.<sup>138</sup>
- (6) It remains to explain the considerable discrepancy between the final Epicurean doxa as furnished in S's block and its formulation in P:

P2 Ἐπίκουρος φθαερόν, ὅτι καὶ γενητόν, ὥς ζῶον ὥς φυτόν.

S9 Ἐπίκουρος πλείστοις τρόποις τὸν κόσμον φθείρεσθαι· καὶ γὰρ ὥς ζῶον καὶ ὥς φυτόν καὶ πολλαχῶς.

The text as given by S follows on neatly from the previous two, using the same verb and placing the emphasis on different kinds of processes or agents that might be involved. It is reminiscent of what we found in A 2.5\*, where Epicurus represented a 'modal' view, i.e. allowing for various possible configurations or explanations (see our discussion *ad loc.*). The text in P differs, because it links up destruction with genesis, but it is perfectly plausible as such. If, however, a choice has to be made between P and S, then it would seem a good deal easier to explain how the former might have altered the original rather than the latter. P has 'normalized' the Aëtian doxa because he needed a representative for the destructionist view, and it was well-known that Epicurus held that position.

9. If our analysis is on the right track, then A's chapter has the following features.

- (1) The title does not cover the full contents of the chapter, which discusses both the question of whether the cosmos is generated and whether it is destructible. Because there is no evidence for the title in S or T, we have little choice but to accept P's slightly misleading title (noting the parallel in Philo cited above).
- (2) A has opted for a symmetrical arrangement, in which first the question of generation is dealt with, followed by the view of cosmic eternity, and then finally the question of destructibility. This means that he has deliberately rejected the conventional approach to the subject found in Philo and elsewhere. It also means that no attempt is made

<sup>137</sup> It was still accepted by Diels *DG* and taken over by Wachsmuth, but was again silently dropped by Diels in his *VS*.

<sup>138</sup> O'Brien (2000), who readily admits (p. 6) that he has not embarked on a full reconstruction of the chapter.



to relate the question to that of the single cosmos/infinite *kosmoi* dealt with in A 2.1 and used by both Aristotle and Philo in their treatment. The symmetrical arrangement is preserved by T in his *very* compact summary.

(3) As far as our evidence permits us to tell, the chapter begins with the view that the cosmos is conceptually but not temporally generated. There does not appear to be a doxa stating that the cosmos was *γενητός* in an unqualified sense.

(4) In the two lemmata that follow (three if the conjectured Stoic position is added), A moves from an adjective (*γενητός*) to verbs (*γεγενῆσθαι*, *συστῆναι*). As noted above, the question of causality is linked to the main theme in the doxographical tradition, even if it is not mentioned in the title. Themes of causality also return in later chapters: cf. 2.6 Ἄπο ποίου πρώτου στοιχείου ἤρξατο κοσμοποιεῖν ὁ θεός, 2.8 Περί τοῦ τίς ἢ αἰτία τὸν κόσμον ἐγκλιθῆναι. It also noteworthy that T defines the eternalist position as ἀγένητον παντελῶς καὶ ἀναίτιον, i.e. not having a cause as is mentioned in the case of the other two positions.

(5) In the middle of the chapter we have the unconditional eternalist position. For this A surprisingly chooses the Eleatic tradition (including Xenophanes), which is consistent with the position given on *γένεσις* and *φθορά* in P 1.24 (used by S to start his § 20).<sup>139</sup> The strong tradition that Aristotle represents this view *par excellence*, possibly with Pythagorean predecessors, is ignored. It is followed by the position of the periodicists, i.e. those who assert a *διακόσμησις αἰώνιος*. This is precisely the view that Aristotle thought was not entirely incompatible with his own at *Cael.* 1.10 279b14–16 and 280a11–27, where Empedocles and Heraclitus are specifically mentioned. A leaves the lemma anonymous, using these name-labels for other doxai. He also does not attribute it to the Stoics, who later become the standard representatives of this view, as we find in Philo.<sup>140</sup> It is a compromise position, and as such obviously provides a neat transition to the destructionists.

(6) Next follows the doxa that the cosmos is prone to destruction, linked in S to a list of six name-labels.<sup>141</sup> These, we note, all pertain to Presocratics, while more detailed views are given for the Stoa and

<sup>139</sup> But in fact goes further than necessary, because the Eleatic position is based on the postulation of a total absence of change, which is not required for the view that the cosmos is eternal.

<sup>140</sup> Von Arnim was thus rash in including the Aëtian lemma as *SVF* 2.597.

<sup>141</sup> There is a fair degree of parallelism with the longer list at ¶ 1.3, with Anaxagoras added.

Plato. The last-mentioned is given the characteristic position that the cosmos is φθαρτός ἀλλ' οὐ φθαρησόμενος. The Aristotelian view then follows, that there is a distinction between the supra- and sub-lunary world (note that the word φθαρτός is not used in this lemma, but only the adjective παθητός).<sup>142</sup>

(7) Again A shifts from an adjective to a verb (φθείρεσθαι), i.e. causality is again introduced. This time no god is involved, since that would be οὐ θέμις, as implied in the Platonic doxa (cf. the classic text *Ti.* 41a, which is cited by S at the end of his § 20). The doxa of Democritus is more mechanistic than that of Empedocles, so follows it in sequence. It is logical for Epicurus to bring up the rear with his theory of multiple explanation (taking the text in S as our preference).

It must be concluded, therefore, that, although S has seriously rearranged the doxai in A, he still gives us the better access to the structure of the original. It would appear that P in his abridgement deviates somewhat from his usual practice of only chopping out or abbreviating lemmata. This is precisely because he is familiar with the conventional scheme found in Philo and many others. He thus could not resist importing it into his shorter version, but this led to some radical changes. Pythagoras, Plato and the Stoics have been awkwardly lumped together, while Epicurus is picked out as the representative for the view that the cosmos is genuinely φθαρτός as well as γενητός. It is plain that P understands the method of the *Placita* very well. Here, in giving a streamlined version of the *quaestio*, he for once makes significant changes to A. Because Diels, as a matter of principle, wished to build his reconstruction around the basic structure supplied by P, he was unable to do justice to the evidence supplied by S, and so finished up with a reconstruction that does not make good sense.

10. The result of our analysis is thus a chapter with a tripartite structure. The view that the cosmos is γενητός at the beginning and the view that it is φθαρτός at the end are bridged by the view that it is neither, i.e. the eternalist position. This resembles a type B διαίρεσις, in which the two opposed views are 'mediated' by a third view, except that the first and third views are not really opposed to each other. In the case of the cosmos' genesis and destruction, the further question can be asked as to what the cause of these processes is. Doxai indicating possible

<sup>142</sup> S has παθητός in his text, but the parallels in P 1.24 and esp. P 2.7.5 suggest that A used the shorter form of the adjective.

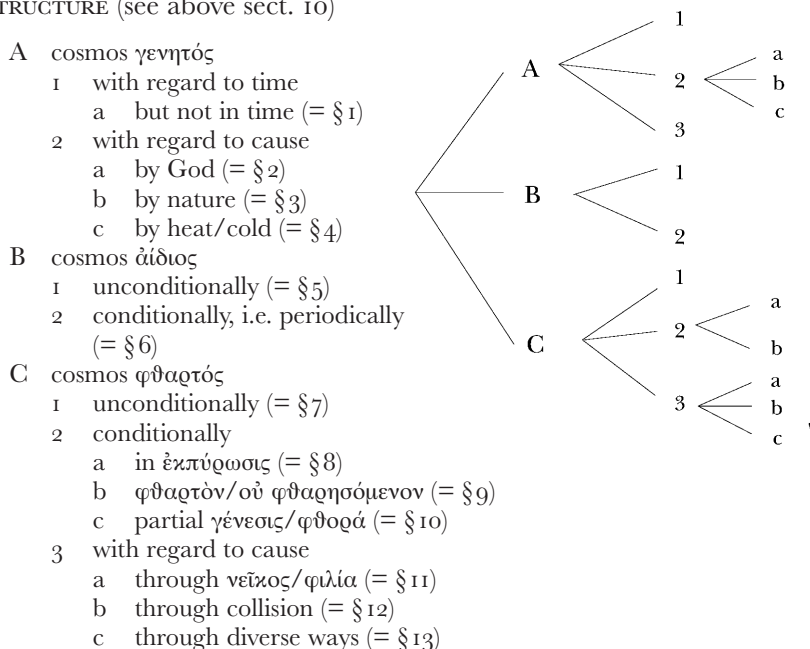
views are included for both. In each case, where applicable, a logical sequence of theological, teleological and mechanistic causes are put forward. A characteristic feature of A's method that emerges very clearly is his love of smooth transition from the one position in the diaeresis to the next. This is not just a matter of association, but also recognition that in the case of very many, if not all, doctrinal divisions, it is possible to find views that bridge the gap. These are incorporated with some skill in the structure of the individual chapter, and give the chapter some sense of movement, which is indicated by means of an arrow (although there is no real teleology).

11. The prevalence of the subject of the cosmos' genesis and possible destruction in dialectical and doxographical texts has already been noted in sect. 7 above. The large collection of parallels listed below, which is by no means exhaustive, demonstrates its popularity beyond all doubt. Amid all this material attention should be drawn to a surprising element in A's doxography which has already been noted, i.e. his association of the view that the cosmos is eternal with the Eleatics rather than with Aristotle and the Pythagoreans. In fact this presentation has remarkable doxographical antecedents in a text at Cicero *Ac.* 2.118–119, in which doxai on the elemental ἀρχαί of the universe are combined with views on how it is created or not (see text below). Both Xenophanes and Melissus are associated with the view that the universe did not come into being but has existed forever. In the case of Xenophanes the doxa is combined with the theme of the cosmos' divinity.<sup>143</sup> Moreover many of the Presocratics named by Cicero are the very same name-labels that occur in A's chapter. Cicero, however, places most of the emphasis on the universe's beginnings, until he comes to the controversy between the Stoics and Aristotle in 2.119. The standard Platonic view based on the *Timaeus* is given. Interestingly the view attributed to the Pythagoreans emphasizes that the universe has its origin in numbers and the principles of the mathematicians. Could this be the source of A's doxa that according to Pythagoras the cosmos is created conceptually, but not in time? Another close parallel to A's presentation is found in Philo, when in a rather loose dialectical passage (*Prov.* 2.48) he associates Parmenides, Empedocles and the Stoics Zeno and Cleanthes

<sup>143</sup> Cf. above sect. 7 on Ambrose and Philo.

with the view that the cosmos is eternal. Here name-labels are attached to the anonymous position in A.<sup>144</sup> And finally we note that the same connection of the Eleatics Xenophanes and Parmenides with the doctrine of the eternity of the cosmos is also found in the fragments of Theophrastus recorded by Simplicius (probably from his *Physics* rather than the *Physikai doxai*).<sup>145</sup>

STRUCTURE (see above sect. 10)



#### RECONSTRUCTED TEXT

δ'. Εἰ ἄφθαρτος ὁ κόσμος

- 1 Πυθαγόρας Ἡράκλειτος γενητὸν κατ' ἐπίνοιαν τὸν κόσμον, οὐ κατὰ χρόνον<sup>1</sup>.

<sup>144</sup> Assuming that Zeno is the Stoic here, not the Eleatic. On this text see Runia (2008) 40–41.

<sup>145</sup> Cf. Diels *DG* 482–483, who considered them to be part of Theophrastus' *Φυσικῶν δόξαι*. For the attribution to the *Physics*, see Steinmetz (1964) 334–351. Diels *DG* 119–121 makes much of this Ciceronian text; for a nuanced evaluation of his claims see Mansfeld (1989a).

- 2 οἱ Στωικοὶ (ὑπὸ θεοῦ γεγενῆσθαι τὸν κόσμον)<sup>2</sup>.  
 3 Ἐπίδικος ὑπὸ φύσεως γεγενῆσθαι τὸν κόσμον.  
 4 Ἀρχέλαος ὑπὸ θερμοῦ καὶ ἐμπυχίας<sup>3</sup> συστήναι τὸν κόσμον.  
 5 Ξενοφάνης Παρμενίδης Μέλισσος ἀγένητον καὶ αἰδῖον καὶ  
 ἀφθαρτον τὸν κόσμον.  
 6 [καὶ]<sup>4</sup> οἱ φάμενοι δὲ τὴν διακόσμησιν αἰώνιον ὑπάρχειν περιο-  
 δευτικούς εἶναι φασὶ χρόνους, καθ' οὓς κατὰ ταῦτα καὶ ὡσαύτως  
 γίνεσθαι πάντα καὶ τὴν αὐτὴν διασώζεσθαι τοῦ κόσμου διάταξιν  
 τε καὶ διακόσμησιν.  
 7 Ἀναξίμανδρος Ἀναξιμένης Ἀναξαγόρας Ἀρχέλαος Διογένης  
 Λεύκιππος φθαρτὸν τὸν κόσμον.  
 8 καὶ<sup>5</sup> οἱ Στωικοὶ φθαρτὸν τὸν κόσμον, κατ' ἐκπύρῳσιν δέ.  
 9 Πλάτων φθαρτὸν μὲν τὸν κόσμον, ὅσον ἐπὶ τῇ φύσει, αἰσθητὸν γὰρ  
 εἶναι, διότι καὶ σωματικόν<sup>6</sup>, οὐ μὴν φθαρησόμενόν γε προνοία καὶ  
 συνοχῇ θεοῦ.  
 10 Ἀριστοτέλης τὸ ὑπὸ τὴν σελήνην τοῦ κόσμου μέρος παθητόν<sup>7</sup>, ἐν ᾧ  
 καὶ τὰ περίγεια κηραίνεται<sup>8</sup>.  
 11 Ἐμπεδοκλῆς τὸν κόσμον φθείρεσθαι<sup>9</sup> κατὰ τὴν ἀντεπικράτειαν τοῦ  
 νείκους καὶ τῆς φιλίας.  
 12 Δημόκριτος φθείρεσθαι τὸν κόσμον τοῦ μείζονος τὸν μικρότερον  
 νικῶντος.  
 13 Ἐπίκουρος πλείστοις τρόποις τὸν κόσμον φθείρεσθαι· καὶ γὰρ ὡς  
 ζῶον καὶ ὡς φυτὸν καὶ πολλαχῶς<sup>10</sup>.

1 ex S; PCyrlQ Πυθαγόρας καὶ οἱ Στωικοὶ γενητὸν ὑπὸ θεοῦ τὸν κόσμον, E

Πυθαγόρας καὶ Πλάτων καὶ οἱ Στωικοὶ, G τὸν Πυθαγόραν καὶ Πλάτωνα

2 coniecimus ex P

3 ἐμπυχίας conj. Meineke, secuti Diels DG et Wachsmuth, reiecit Diels VS

4 secl. Diels, Wachsmuth

5 secl. Diels, fortasse recte

6 σωματικός Cyril

7 PEGCyril παθητόν, S Diels παθητικόν

8 Cyril codd. περαίνεται, Q κεράννυται ut vid.

9 (γίνεσθαι καὶ) φθείρεσθαι conj. Sturz, secuti Diels DG Wachsmuth, non recte

10 ex S, PEQCyril post lemma Platonis Ἐπίκουρος φθαρτόν, ὅτι καὶ γενητόν, ὡς  
 ζῶον ὡς φυτὸν

§1a–; §1b 22A10 DK; §3–; §4 60A14 DK; §5a 21A37 DK; §5b 28A36 DK; §5c 30A9  
 DK; §6 cf. SVF 2.597; §7a 12A67 DK; §7b–; §7c 59A65 DK; §7d 60A14 DK; §7e  
 64A10 DK; §7f 67A22 DK; §8 SVF 2.575; §9–; §10 T19 Gigon; §11 31A52 DK; §12  
 68A84 DK; §13 fr. 305 Usener

## 4. Whether the cosmos is indestructible

- 1 Pythagoras and Heraclitus (declare that) the cosmos is generated in thought, but not in time.
- 2 The Stoics (declare that) the cosmos has come into being through the agency of God.
- 3 Epidicus (declares that) the cosmos has come into being through the agency of nature.
- 4 Archelaus (declares that) the cosmos has been produced through the agency of warmth and ensoulment.
- 5 Xenophanes and Parmenides and Melissus (declare that) the cosmos is ungenerated and everlasting and indestructible.
- 6 But there are those who declare that its ordering is eternal, yet declare that there are periodic times in accordance with which all things come into being in exactly the same way and preserve the same disposition and ordering of the cosmos.
- 7 Anaximander and Anaximenes and Anaxagoras and Archelaus and Diogenes and Leucippus (declare that) the cosmos is destructible.
- 8 The Stoics too (declare that) the cosmos is destructible, but (this occurs) in the conflagration.
- 9 Plato (declares that) the cosmos is destructible as far as its nature is concerned, for it is sense-perceptible—since it is corporeal as well—but that through the providence and supervision of God it will certainly not be destroyed.
- 10 Aristotle (declares that) the part of the cosmos below the moon is passible, in which the things on earth perish too.
- 11 Empedocles (declares that) the cosmos is destroyed in accordance with the successive dominance of strife and friendship.
- 12 Democritus (declares that) the cosmos is destroyed when the larger (object) defeats the smaller one.
- 13 Epicurus (declares that) the cosmos is destroyed in very many ways, such as happens in the case of an animal or of a plant, or in numerous other ways.

## DIALECTICAL-DOXOGRAPHIC PARALLELS

**Gorgias** fr. 82B3(68) DK, καὶ μὴν οὐδὲ τὸ ὄν ἔστιν. εἰ γὰρ τὸ ὄν ἔστιν, ἦτοι αἰδιὸν ἔστιν ἢ γενητὸν ἢ αἰδιὸν ἅμα καὶ γενητὸν· οὔτε δὲ αἰδιὸν ἔστιν οὔτε γενητὸν οὔτε ἀμφοτέρω, ὥς δεῖξομεν ... **Plato** *Ti.* 27c4–5, ἡμᾶς δὲ τοὺς περὶ τοῦ παντός λόγους ποιησθαι πῇ μέλλοντας, εἰ γέγονεν ἢ καὶ ἀγενές ἐστιν (on the text, cf. Runia (1986) 89, Dillon (1989) 57); 28b4–7 σκεπτέον δ' οὖν περὶ αὐτοῦ (sc. κόσμου) ... πότερον ἦν αἰεὶ, γενέσεως ἀρχὴν ἔχων οὐδεμίαν, ἢ γέγονεν, ἀπ' ἀρχῆς τινος ἀρξάμενος. **Aristotle** *Metaph.* A 2 982b12–17, διὰ γὰρ τὸ θαυμάζειν οἱ ἄνθρωποι καὶ νῦν καὶ τὸ πρῶτον ἦρξαντο φιλοσοφεῖν, ἐξ ἀρχῆς μὲν τὰ πρόχειρα τῶν ἀτόπων θαυμάσαντες, εἶτα κατὰ μικρὸν οὕτω προϊόντες καὶ περὶ τῶν μειζόνων διαπορήσαντες, οἷον περὶ τε τῶν τῆς σελήνης παθημάτων καὶ τῶν περὶ τὸν ἥλιον καὶ ἄστρα καὶ περὶ τῆς τοῦ παντός γενέσεως. *Top.* I.11 104b8, ἔνια [τῶν

προβλημάτων χρησιμον εἰδέναι] δὲ πρὸς τὸ εἰδέναι μόνον, οἷον πότερον ὁ κόσμος αἰδῖος ἢ οὐ; 1.14 105a24, φυσικαὶ [προτάσεις] δὲ οἷον πότερον ὁ κόσμος αἰδῖος ἢ οὐ. *Cael.* 1.10 279b4, λέγωμεν ... πότερον ἀγέννητος ἢ γενητὸς καὶ ἄφθαρτος ἢ φθαρτός, διεξελθόντες πρότερον τὰς τῶν ἄλλων ὑπολήψεις ... γενόμενον μὲν οὖν ἅπαντες εἶναι φασιν, ἀλλὰ γενόμενον οἱ μὲν αἰδῖον, οἱ δὲ φθαρτὸν ὥσπερ ὅτι οὖν ἄλλο τῶν φύσει συνισταμένων, οἱ δ' ἐναλλάξ ὅτε μὲν οὕτως ὅτε δὲ ἄλλως ἔχειν φθειρόμενον, καὶ τοῦτο αἰεὶ διατελεῖν οὕτως ...; cf. 2.1 283b31, καὶ διὰ τῆς δόξης τῆς παρὰ τῶν ἄλλων λεγόντων καὶ γεννώντων αὐτόν. **Theophrastus** *Phys. Dox.* fr. 6, 8 Diels. **Stoics** *ap.* D.L. 7.132, καθ' ἣν ζητεῖται ἢ τ' οὐσία αὐτοῦ (sc. κόσμου) ... καὶ εἰ γενητὸς ἢ ἀγέννητος ... καὶ εἰ φθαρτός ἢ ἄφθαρτος ... **Cicero** *Ac.* 2.118–119, princeps Thales ... ex aqua dixit constare omnia. at hoc Anaximandor populari et sodali suo non persuasit; is enim infinitatem naturae dixit esse e qua omnia gignerentur. post eius auditor Anaximenes ... Anaxagoras ... Xenophanes, paulo etiam antiquior, unum esse omnia neque id esse mutabile, et id esse dei, neque natum umquam et sempiternum ... Melissus hoc quod esset infinitum et immutabile et fuisse semper et fore. Plato ex materia in se omnia recipiente mundum factum esse censet a deo sempiternum. Pythagorei ex numeris et mathematicorum initiis proficisci volunt omnia. ... erit ei (Stoico) persuasum ... fore tamen aliquando ut omnis hic mundus ardore deflagret. cum enim tuus iste Stoicus sapiens syllabatim tibi ista dixerit, veniet flumen orationis aureum fundens Aristoteles qui illum desipere dicat; neque enim ortum esse umquam mundum quod nulla fuerit novo consilio inito tam praeclari operis inceptio, et ita esse eum undique aptum ut nulla vis tanto queat motus mutationemque moliri, nulla senectus diuturnitate temporum exsistere ut hic ornatus umquam dilapsus occidat...; cf. *N.D.* 1.20–21, *Tim.* 5. **Philo** *Aet.* 3, ἄξιον οὖν τοὺς ζητοῦντας εἰ ἄφθαρτος ὁ κόσμος ... 7, τριπταὶ δ' περὶ τοῦ ζητουμένου γεγόναι δόξαι, τῶν μὲν αἰδῖον τὸν κόσμον φαιμένων, ἀγέννητόν τε καὶ ἀνώλεθρον, τῶν δὲ ἐξ ἐναντίας γενητόν τε καὶ φθαρτόν εἰσι δ' οἱ παρ' ἑκατέρων ἐκλαβόντες, τὸ μὲν γενητόν παρὰ τῶν ὑστέρων παρὰ δὲ τῶν προτέρων τὸ ἄφθαρτον, μικτὴν δόξαν ἀπέλιπον, γενητόν καὶ ἄφθαρτον οἰηθέντες αὐτὸν εἶναι; *Prov.* 2.48 Aucher, age, interim ponamus inter nos universon ingenitum ac sempiternum, juxta illud quod suggerit sermo celeberrimorum philosophantium, sicut conscribunt Parmenides, Empedocles, Zeno, Cleanthes, aliique divi homines, ac velut verus quidam proprieque sacer coetus; cf. *Ebr.* 199, *Her.* 246, *Opif.* 54, *Abr.* 162–163. **Quintilian** *Inst. Or.* 7.2.2 ut in (quaestionibus) generalibus 'an atomorum concursu mundus sit effectus, an providentia regatur, an sit aliquando casurus'. **Galen** *De propr. plac.* 2 Nutton, igitur dico quod non habeo scientiam utrum mundus sit generatus ...; *De exper. med.* 19.3 Walzer; *De locis affectis* 3.5 8.159.6 Kühn; *De pecc. dign.* 3.4 46.23 De Boer; *De plac. Hp. et Pl.* 9.7.9 (list of theoretical questions), ὁμοίως δὲ καὶ εἰ γεννητὸς ἢ ἀγέννητος ὅδε ὁ κόσμος, ὥσπερ γε καὶ εἰ γεγονότος αὐτοῦ θεὸς τις ἐγένετο δημιουργὸς ἢ θεὸς μὲν οὐδεὶς, αἰτία δὲ τις ἄλογός τε καὶ ἄτεχνος εἰργάσατο κατὰ τύχην οὕτως καλὸν αὐτόν ... etc. **Alexander of Aphrodisias** *ap.* Simp. in *Cael.* 293.15. **Tertullian** *Apol.* 11.5, 47.8. **Minucius Felix** 34.1–4. **Ps.Galen** *Hist. phil.* 17 Diels. **Lactantius** *Div. Inst.* 2.10.17–25, 7.1.6–10. **Marius Victorinus** in *Cic. Rhet.* 235.27 Halm, ergo, ut diximus, ex his, quae in opinione sunt posita, probabile colligitur argumentum, si dicas inferos esse vel

non esse, deos esse vel non esse, mundum natum, mundum non esse natum. **Ambrose** *Exam.* 1.1.3–4, ipsumque mundum semper fuisse et fore Aristoteles usurpat dicere: contra autem Plato non semper fuisse et semper fore praesumit adstruere, plurimi vero non fuisse semper nec semper fore scriptis suis testificantur. inter has dissensiones eorum quae potest ueri esse aestimatio, cum alii mundum ipsum deum esse dicant... **Augustine** *C. Ac.* 3.23, scio mundum istum nostrum ... aut semper fuisse et fore, aut coepisse esse minime desitutum; aut ortum ex tempore non habere, sed habiturum esse finem; aut et manere coepisse et non perpetuo esse mansurum. *C.D.* 12.12, alii vero, qui mundum istum non existimant sempiternum, sive non eum solum, sed innumerales opinentur, sive solum quidem esse, sed certis saeculorum intervallis innumerabiliter oriri et occidere ...; cf. 18.41. **Themistius** in *Cael.* 57.30–37 Landauer. **Servius** *Comm. in Verg. Georg.* 2.336, 3.1.248 Thilo (cf. Varro *Sat. Menipp.* frag. 84 Astbury), si crescit (sc. mundus), deficit: in quo videtur secutus Epicurum, qui ait: omnia, quae orta, occidunt et aucta senescunt. Varro autem in satura quae scribitur de salute ait mundum haud natum esse neque mori. Plato autem non natum aut mori. Metrodorus autem neque natum neque mori. Zenon ex hoc mundo quamvis aliqua intereant, tamen ipsum perpetuo manere quia inhaereant ei elementa e quibus generantur materiae ut dixit crescere quidem sed ad interitum non pervenire manentibus elementis a quibus revallescant. **Johannes Philoponus** in *APo.* 238.28, οἷον ὅταν μὲν ζητῶμεν, εἰ τύχοι, περὶ οὐρανοῦ ... ὅταν δὲ πότερον αἰδῖος ἢ οὐκ, τὸ ποτέ. **Simplicius** in *Ph.* 1121.5–22.3, remarkable doxography which integrates the question of single or multiple *kosmoi* with the question of motion: a. infinitists—*kosmoi* come into being and pass away (Anaximander, Leucippus, Democritus, later Epicurus); b. unicists, cosmos αἰδῖος (Plato, Aristotle); c. unicists, but periodically changing (Anaximenes, Heraclitus, Diogenes, later Stoa, special position Empedocles); d. unicists, cosmos had beginning in time (Anaxagoras, Archelaus, Metrodorus); e. special position, Plato in the interpretation of Alexander; cf. also in *Cael.* 293.11–95.29 (Orpheus, Hesiod, Plato, Empedocles, Heraclitus, Stoics, Democritus). **Schol. in Basil. Hex.** 1.4 (= *Dox. Pasq.* XV), Πυθαγορικοί Πλατωνικοί Ἀριστοτελικοί μάλιστα· οὗτοι γὰρ πάντες οὐ φθείρουσι κόσμον· οἱ ἀπὸ τῆς Στοᾶς, φθείροντες ἐν τῇ ἐκπυρώσει τὴν διακόσμησιν (καθὰ περ πρότερον καὶ ὁ σκοτεινὸς Ἡράκλειτος), οὐκ ἂν ἡμᾶς διασύροιν· ἀλλ' οὐδὲ οἱ Ἐπικούρειοι· καὶ γὰρ οὗτοι λύεσθαι φασὶ τὸν κόσμον, τῆς τῶν ἀτόμων ἀντεμπλοκῆς τῷ χρόνῳ διάστασιν δεχομένης. For further texts see also Péripin (1964) 79–100.



Aëtius *Placita* 2.5  
Πόθεν τρέφεται ὁ κόσμος

WITNESSES

Ps.Plutarch 2.5, Eusebius 15.36, ps.Galen 48, Qusṭā Ibn Lūqā 2.5  
Stobaeus 1.20.1g, 21.6bd  
Cf. Achilles 5

ANALYSIS

1. The questions dealt with in the two previous chapters have been whether the cosmos is ensouled or not, i.e. is it a living being, and whether it is subject to generation and destruction. If the answer to both is affirmative, as it is for example (at least partly) in the Platonic tradition based on the *Tīmaeus*, the progression to the question of the source of its nourishment is a natural one. A appears to take as his point of departure the results of the previous chapters, so we shall see that it contains no reference to philosophers such as the atomists who do not have a teleological view of the cosmos. The parallels with the chapter of the source of the food of the heavenly bodies (§17a) should be noted; see further ch. 17a sect. 7. For the microcosm a parallel chapter is P 5.17 Πῶς τρέφεται τὰ ἔμβρυα.

2. P is the main source for our evidence on A, since T is silent and S on this occasion furnishes less material. His text has 3 lemmata arranged in a straightforward sequence:

ε'. Πόθεν τρέφεται ὁ κόσμος

- P2.5.1 Ἀριστοτέλης· εἰ τρέφεται ὁ κόσμος, καὶ φθαρήσεται· ἀλλὰ μὴν οὐδεμῶς τινος ἐπιδεῖται τροφῆς· διὰ τοῦτο καὶ αἰδῖος.
- P2.5.2 Πλάτων αὐτὸν αὐτῷ τὸν κόσμον ἐκ τοῦ φθίνοντος κατὰ μεταβολὴν τὸ τρέφον παρέχεσθαι.
- P2.5.3 Φιλόλαος διπτὴν εἶναι τὴν φθορὰν, τότε μὲν ἐξ οὐρανοῦ πυρὸς ῥυέντος, τότε δ' ἐξ ὕδατος σεληνιακοῦ περιστροφῇ τοῦ ἀέρος ἀποχυνθέντος· καὶ τούτων εἶναι τὰς ἀναθυμιάσεις τροφὰς τοῦ κόσμου.

The alternative title in one of P's mss. Εἰ τρέφεται ὁ κόσμος is not supported by any of the other witnesses and is no doubt derived from the Aristotelian doxa directly below it. E and Q show no significant variations, except perhaps that Q's 'infolge des Mondwechsels' might presume the reading ἀστέρος rather than ἄερος in the last doxa, which as we shall see agrees with one of the versions in S. G of course is confined within the parameters of what he found in P, but this chapter is an interesting example of the kind of changes he makes. The lemmata of Aristotle and Plato are compressed and in the process made less clear (e.g. in the case of Plato the fact that the cosmos feeds *on itself* is paraphrased away). The epithet ὁ Πυθαγόρειος is added to Philolaus' name (perhaps drawn from P 3.11.3, 3.13.2), while a short-cut is introduced in the doxa by changing φθορά to τροφή. He has trouble understanding the phrase about the 'lunar water' and comes up with an absurd *Verschlimmbesserung*.

3. Just like in the previous chapter, S has divided the material up between his ch. 20 and ch. 21, but this time the treatment he gives it has some very odd features.

The doxa attributed to Philolaus is cited in ch. 20 following on directly from the long block of 8 lemmata taken from A 2.4:

- 1.20 title    Περί γενέσεως καὶ φθορᾶς  
 1.20.1g  
 S1a         Φιλόλαος διτιτὴν εἶναι τὴν φθορὰν τοῦ κόσμου, τότε μὲν ἐξ ὕγροῦ  
               πυρὸς ῥυέντος, τότε δ' ἐξ ὕδατος σεληνιακοῦ περιστροφῇ τοῦ  
               ἀστέρος ῥυέντος.

It is apparent that the difference between this text and the parallel version in P is quite marked. But things get even more complicated if the evidence of ch. 21 is added:

- 1.21 title    Περί κόσμου καὶ εἰ ἔμψυχος καὶ προνοία διοικούμενος καὶ ποῦ  
               ἔχει τὸ ἡγεμονικὸν καὶ πόθεν τρέφεται  
 1.21.1       Πλάτωνος.  
               Πλάτων τὸν κόσμον ἔφησε ζῶον ἔμψυχον ἔνουν τε, ὅτι τε ἅφ'  
               ἑαυτοῦ τρέφεται, τὸ δὲ ἡγεμονικὸν τοῦ κόσμου ἐν οὐρανῷ τίθεται.  
               λέγει γοῦν οὕτως ἐν τῷ Τιμαίῳ·

The final words of S's chapter title clearly allude to the title of 2.5 as he read it in A. The Platonic lemma, however, cannot be regarded as an extract from the *Placita*. S first very briefly summarizes three Platonic doxai: (1) that the cosmos is a living being, (2) that it has an internal source of nourishment, and (3) that its ἡγεμονικόν is in heaven. Each

one is treated differently. For (1) he proceeds to quote *Ti.* 30a2–c1, but still cites A's doxa at 3c (= S1 in A 2.3\*); for (2) he substitutes the text of its source in *Ti.* 33c6–d1; for (3) he cannot give a Platonic quote, since the formulation of the doxa is anachronistic (on this doxa see the following chapter on ¶5a). S has thus basically followed his customary method of replacing Ætian lemmata by summaries of and quotes from Platonic works (see Vol. I:266).

S does retain in this chapter the two remaining doxai found in P:

1.21.6b

Ἀριστοτέλης

S2

—εἰ δὲ τρέφεται ὁ κόσμος, καὶ φθαρήσεται· ἀλλὰ μὴν οὐδεμιᾶς ἐπιδεῖται τροφῆς διὰ τοῦτο καὶ αἰδῖος.

1.21.6d

S3 (= 1b)

Φιλόλαος ἔφησε τὸ μὲν ἐξ οὐρανοῦ πυρὸς ὀνέντος, τὸ δὲ ἐξ ὕδατος σεληνιακοῦ περιστροφῇ τοῦ ἀέρος ἀποχυθέντος εἶναι τὰς ἀναθυμιάσεις τροφὰς τοῦ κόσμου.

The Aristotelian lemma is preserved by coalescing it with the view on providence from A 2.3.4\* (with the two doxai linked by δέ). The doxa of Philolaus is cited for a second time after a cluster of Pythagorean doxai from ¶4, ¶6 and ¶1. The repeated citation of the same doxa is unique in S's adaption of A (cf. Vol. I:223). It is of course not difficult to see how S came to cite the doxa twice. It speaks of the φθορά τοῦ κόσμου, so is relevant to the subject of ¶20, but it also deals with the question of the cosmos' nourishment, which is included as part of ¶21. Nevertheless the repetition runs counter to S's normally careful practice, and it is difficult to determine whether it was done intentionally or as an oversight.<sup>146</sup> It means moreover that there are three versions of the same lemma, which as we shall see can only with great difficulty be reduced to a single text.<sup>147</sup>

<sup>146</sup> Diels calls S's practice 'fraus' (*DG* 68), but it is difficult to see what is fraudulent about it. Even if it was deliberate (which is not so likely), there is no reason why an anthologist should not use a single text in two different places.

<sup>147</sup> Even in the case of just S the editor here has some difficult choices to make. Is it likely that there will be a radical difference between the two citations made in successive chapters? Wachsmuth chooses to make the two versions conform to each other as much as possible. He may be correct, but we have cited the texts as found in the mss. Certainly it is unlikely that the double ὀνέντος would have been present in S. We record all differences in the apparatus to the text below.

4. In the absence of evidence in T it is all the more fortunate that Ach supplies us with some important material in his chapter on the οὐσία of heaven, following straight on from the description of the κόσμος as a ζῶον.<sup>148</sup>

*Isagoge* 5, 35.15–18 Maass ~ 14.13–15 Di Maria

Ach1	τροφῇ δὲ χρῆται, ὥς μὲν τινες, παρ' ἑαυτοῦ,
Ach2	ἄλλοι δὲ ἀναθυμιάσει τῇ περὶ αὐτόν,
Ach3	τινὲς δὲ τῇ τοῦ ὕδατος σφαίρᾳ.
Ach4	Ἀριστοτέλης δὲ μὴ δεῖσθαι τροφῆς αὐτόν λέγει· τὸ γὰρ δεόμενον φθατὸν, αἰδὼς δὲ ἐστὶ κατ' αὐτόν.

Of the four views, the first and last are clearly equivalent to those of Plato and Aristotle in A. The former is now presented anonymously, as was the Platonic view at A 2.3.1. The latter now comes last instead of first. The second doxa may be linked to the Pythagorean doxai recorded at P 1.18.5 = S 1.18.1c and P 2.9.1.<sup>149</sup> Diels *DG* 23, who at the time of writing thought that Ach was based on P, argued that the entire chapter is a garbled version of P, but this of course is quite wrong. The third doxa is perhaps related to the Philolaic doxa in A, but is shortened beyond recognition.

5. Our evidence suggests, therefore, that the original chapter had only three doxai, one less than found in Ach. The first doxa, attributed to Aristotle, denies that the cosmos has any need of food at all. From the formal point of view the doxa is quite unusual. It gives the name-label followed by a colon, which introduces a brief argument. This form of presentation is found elsewhere only at P 1.25.1 (Thales) and 4.8.2 (Epicurus).<sup>150</sup> Oddly the argument<sup>151</sup> refers to the subject of the chapter in the two antecedent clauses rather than in the conclusion. Its conclusion is actually better suited to ¶4 on the indestructibility of

<sup>148</sup> We have made some changes to the punctuation. Note that although the subject of the chapter is the heaven, various doxographical extracts in it deal with the cosmos as a whole, as is the case here. The confusion is aided by the fact that the word οὐρανός notoriously can mean either cosmos or heaven in the narrower sense.

<sup>149</sup> On this text see below on ch. 2.9. P mistakenly attributes the doxa to Aristotle, but S makes clear that A cited Aristotle *on* the Pythagoreans.

<sup>150</sup> We do not include P 1.23 and 5.3.1 because in these cases the colon introduces definitions.

<sup>151</sup> It appears to have the form of a Stoic hypothetical syllogism, but as Christian Wildberg points out to me, it is in fact fallacious (if P then Q, but -P, then -Q, instead of -Q, then -P).

the cosmos, where Aristotle does *not* represent the eternalist position. The reverse form of the argument in Ach in the form of a syllogism suits the context much better. The doxa is in fact a rare example where the *Placita* give an argument rather than just posit an opinion. The passage has been claimed for Aristotle's *De philosophia*, but this must remain quite uncertain.<sup>152</sup>

As we noted above in our discussion of S's excerpting, the Platonic lemma is plainly derived from *Ti.* 33c4–d1 (and esp. from c7, αὐτὸ γὰρ ἑαυτῷ τροφὴν τὴν ἑαυτοῦ φθίσιν παρέχον). Interestingly this same text is quoted by Philo as a kind of proof text in a series of Aristotelian/Peripatetic arguments in favour of the eternity of the cosmos at *Aet.* 38.<sup>153</sup> Indeed both doxai assume the self-sufficiency of the cosmos, but they are interpreted as taking opposing points of view on the question of whether the cosmos is nourished or not.

The difficult Philolaic doxa remains. There are three differing versions, one in P and two in S. The task is to try to determine what originally stood in A. It is hardly possible to reach any degree of certainty, but the following considerations have led to our preferred text. This discussion has benefited greatly from the competent treatment of Huffman in his edition of the fragments of Philolaus, which supersedes all previous scholarship.<sup>154</sup>

- (a) The two versions in S have clearly been adapted to their context in ch. 20 and 21. This should make us reluctant to accept the reading τὴν φθορὰν τοῦ κόσμου in S1a as opposed to P and S1b. The other puzzling variants in S1a (ἐξ ὕγρου, repeated δυνέντος) should also be ignored.
- (b) It is difficult to choose between τότε μέν/τότε δέ and τὸ μέν/τὸ δέ, which are attested in about equal measure in the various versions. In the doxographic context, however, an emphasis on classification (on the one hand, on the other) is more likely than an emphasis on temporality (on the one occasion, on the other), so we join Diels and Huffman in opting for τὸ μέν/τὸ δέ.
- (c) From the viewpoint of method it seems best to attempt to read the grammatical constructions in the clauses introduced by τὸ μέν/τὸ δέ as parallel. It thus makes sense to accept Corsinus' emendation of οὐρανοῦ (i.e. 'from heavenly fire rushing down'). Here we deviate from Huffman, who in the first phrase takes ἐξ οὐρανοῦ as local ('when fire rushes

<sup>152</sup> By Effe (1970) 19; cf. similar Aristotelian (or Peripatetic) argumentation at Philo *Aet.* 20–44 (on which see Runia (1986) 191–198). The argument is not found as such in Aristotle's extant writings.

<sup>153</sup> See previous note.

<sup>154</sup> Huffman (1993) 261–266; previous discussions in Boeckh (1819) 111–114, Zeller (1920–1923) 1.549, Burkert (1972) 315 n. 86.

in from the heaven'), but in the second takes ἐξ ὕδατος σεληνιακοῦ (whatever 'moon-water' may be) as constituting the destructive force ('from lunar water when it is poured'). This is the reason for the comma in his text before περιστροφῇ τοῦ ἀέρος ἀποχυνθέντος.

- (d) It is tempting to read the variant ἀστέρος instead of ἀέρος, i.e. by the revolution of the moon itself as heavenly body, but it is not well enough attested to justify rejecting the *lectio difficilior*. Equally one might be tempted to take σεληνιακοῦ with ἀέρος rather than ὕδατος, but this reading goes against the flow of the Greek.

For further discussion of the interpretation of the doxa see the discussion in Huffman. There are clear conceptual links with the Platonic–Aristotelian doctrine of periodic natural disasters (cf. esp. *Ti.* 22a–d, *Mete.* 1.14) and the Aristotelian doctrine of the dry and moist exhalations which were developed later. It is surprising, therefore, that the doxa is placed in contrast to the views of these two philosophers.

6. Turning now to the chapter's structure, we begin by observing that the first two doxai are organized by means of a type A diaeresis, the former expressing the view that the cosmos has no nourishment, the second that its nourishment is purely internal. As noted above, both can be linked to the doctrine of cosmic self-sufficiency as argued in Plato's *Timaeus*. The opposition does not flow from the chapter's title, which assumes that there *is* cosmic τροφή. By means of a second diaeresis the third doxa contrasts the view of two kinds of nourishment via destruction to the view of a single unspecified φθίσις attributed to Plato. In principle there is no reason why this diaeresis should be confined to just two members. There could be more kinds of internal nourishment. So we should regard it as a type C diaeresis. We note also that the first and last lemmata are in a way mirror images of each other:

Aristotle:	no τροφή	therefore, no φθορά
Philolaus:	two kinds of φθορά	therefore, two kinds of τροφή

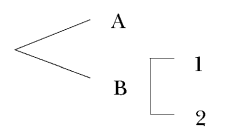
This is an example of A's love of symmetry. The sequence of the lemmata in P, thus, makes good sense. It is quite surprising, however, that—unlike in Ach—the option of external nourishment is not explored. It is reserved, it would seem, for the chapter on the void, A 2.8, where reference is made to Pythagorean and Stoic views. The question of nourishment in a cosmological context returns in A 2.17 (on the stars) and 2.23 (the sun). The doctrine of cosmic nourishment is also referred to in P 1.3.1 as an argument in favour of Thales' doxa that water is the first principle: τρίτον, ὅτι καὶ αὐτὸ τὸ πῦρ τὸ τοῦ ἡλίου καὶ τὸ τῶν ἀστρῶν

ταῖς τῶν ὑδάτων ἀναθυμιάσει τρέφεται καὶ αὐτὸς ὁ κόσμος. This text is another case of linkage between the main body of the *Placita* and the opening chapters of A's work.<sup>155</sup>

7. For the subject of cosmic τροφή parallel material (apart from Ach) is scant. The similarity of the passages in A and Ach point to a common anterior tradition, which is likely to have had a more extensive set of diaereses than we find in A. But there is no need to conclude that our reconstruction of A is incomplete. Other parallels mainly relate to the view of Plato that the cosmos supplies its own nourishment, which is occasionally contrasted with the Stoic doctrine of the cosmic conflagration (Plutarch, Aeneas). The theme evidently did not gain a prominent place in the tradition of the θέσις or the *quaestio*, and was also not popular in doxographical accounts.

STRUCTURE (see above sect. 5)

- A cosmos has no nourishment (= §1)
- B cosmos does have nourishment
  - 1 through internal decay (= §2)
  - 2 through internal destruction in dry and moist exhalations (= §3)



RECONSTRUCTED TEXT

ε'. Πόθεν<sup>1</sup> τρέφεται ὁ κόσμος

- 1 Ἀριστοτέλης· εἰ τρέφεται ὁ κόσμος, καὶ φθαρήσεται· ἀλλὰ μὴν οὐδεμιᾶς τινος<sup>2</sup> ἐπιδείται<sup>3</sup> τροφῆς· διὰ τοῦτο καὶ αἰδῖος.
- 2 Πλάτων αὐτὸν αὐτῷ τὸν κόσμον ἐκ τοῦ φθίνοντος κατὰ μεταβολήν<sup>4</sup> τὸ τρέφον παρέχεσθαι.
- 3 Φιλόλαος διττὴν εἶναι τὴν φθοράν<sup>5</sup>, τὸ μὲν<sup>6</sup> ἐξ οὐρανίου<sup>7</sup> πυρὸς ῥυέντος, τὸ δ' ἐξ<sup>8</sup> ὕδατος σεληνιακοῦ περιστροφῇ τοῦ ἀέρος<sup>9</sup> ἀποχυθέντος<sup>10</sup>· καὶ τούτων<sup>11</sup> εἶναι τὰς ἀναθυμιάσεις τροφὰς τοῦ κόσμου.

1 Eἰ P<sup>2</sup>

2 om. SE Diels

3 δείται S

4 κατὰ μεταβολήν om. Q

<sup>155</sup> On this subject see further Part I sect. 6.

- 5 τοῦ κόσμου add. S<sup>a</sup> (et Q<sup>2</sup>)  
 6 τότε μὲν ... τότε δέ PEQS<sup>a</sup>, τὸ μὲν ... τὸ δέ GS<sup>b</sup> Diels Wachsmuth Huffman  
 7 conj. Corsinus, ἐξ οὐρανοῦ PEGQS<sup>b</sup> ἐξ ὑποῦ S<sup>a</sup>  
 8 ἐξ reiecit Usener  
 9 ἀστέρος ὀνέντος S<sup>a</sup> ἀστέρος P<sup>1</sup>, 'infolge des Mondwechsels' Q  
 10 περὶ τοὺς ἀστέρας ἀποχομένου G  
 11 del. S<sup>b</sup>Q, τοῦτου conj. Capelle

§1 T19 Gigon; §2-; §3 44A18 DK

#### 5. Where does the cosmos obtain its nourishment from

- 1 Aristotle: if the cosmos obtains nourishment, it will also be subject to destruction; but it is certainly not in need of any nourishment; for this reason it is everlasting as well.
- 2 Plato (declares that) the cosmos of its own accord provides nourishment for itself from that which decays through transformation.
- 3 Philolaus (declares that) there is a double (form of) destruction, in the one case from heavenly fire that has rushed (down), in the other case from moon-water that has been poured forth by the conversion of the air; and the exhalations of these are nourishment for the cosmos.

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Plato** *Ti.* 33c–d. **Stoics** *ap.* Cic. *N.D.* 2.24–28. **Philo** *Aet.* 74, πρὸς δὲ τούτοις φησὶ (sc. ὁ Κριτόλαος) τριπτάς αἰτίας δίχα τῶν ἔξωθεν ὑποβεβλησθαι ζώοις τελευτήs, νόσον, γῆρας, ἔνδειαν, ὧν οὐδεμῶς τὸν κόσμον ἄλωτὸν εἶναι ... αὐταρκέστατον τε αὐτὸν αὐτῷ καὶ ἀνεπιδεᾶ παντὸς γεγονέναι, μηδενὸς τῶν εἰς διαμνην ὑστερίζοντα, τὰς κενώσεως καὶ πληρώσεως ἐν μέρει διαδοχὰς ἀπωσάμενον, αἷς διὰ τὴν ἄμουνσον ἀπληστίαν τὰ ζῶα χρῆσθαι ...; cf. 85–103 (polemic against the Stoics). **Plutarch** *De Stoic. repugn.* 1052B–E (misuse of Plato by Chrysippus). **Galen** *In Hp. de nat. hom.* 95.15 Kühn, (ᾧδλον οὖν ὅτι) τὰ τοῦ κόσμου στοιχεῖα τὴν τροφήν ἐξ ἀλλήλων ἔχοντά ἐστι, καὶ διὰ τοῦτο καὶ ὁ Πλάτων εἶπεν “αὐτὸ γὰρ ἑαυτῷ τροφήν τὴν ἑαυτοῦ φθίσιν παρέχον καὶ πάντα ἐν αὐτῷ καὶ ὑπ’ αὐτοῦ καὶ πάσχον καὶ δρῶν ἐκ τέχνης γέγονεν.” **Epictetus** *fr.* 13 Oldfather (= Stob. *Ecl.* 1.3.50), καὶ τίς, ὃ κακὸς δαίμων, αὐτὸς ἐξ ἑαυτοῦ τρέφεται ἄλλος γε ἢ ὁ κόσμος; **Proclus** *in Ti.* 2.88.8–31 (nourishment of cosmos, not heavenly bodies). **Aeneas Gaza** *Theophrastus* 51.14, οἶδε τὴν φθορὰν ταύτην ὁ Πλάτων, εἰ καὶ τὴν μέλλουσαν ἀθανασίαν ἠγνόησεν· οὐ γὰρ τῆς γῆς μόνον, ἀλλὰ καὶ τοῦ οὐρανοῦ φθορὰν ἐπεισάγει Τιμαίω, λέγων ἐκ τῆς οἰκείας φθορᾶς τὸν οὐρανὸν τρέφεσθαι ... εἰ τοίνυν τροφή καὶ φθορὰ, ποῦ τὸ ἀθάνατον; ... τοῖς δὲ ἀπὸ τῆς Στοᾶς ἐδόκει πολλάκις μὲν φθείρεσθαι τὸν οὐρανὸν καὶ τὴν γῆν, πολλάκις δὲ ἀνανεοῦσθαι. See further the texts cited on ch. 17.



Aëtius *Placita* 2.5a

Ποῦ ἔχει τὸ ἡγεμονικὸν ὁ κόσμος

WITNESS

Stobaeus I.2I.6de, cf. I.2I.1

ANALYSIS

1. In our analysis of ch. 5 we remarked that as part of his chapter I.2I S records material on the subject of the regent part (τὸ ἡγεμονικόν) of the cosmos that has no equivalent in P and cannot be fitted into any of his chapters. The material must now be fitted into our reconstruction. S's evidence is as follows:

- |            |   |
|------------|---|
| I.2I title | Περὶ κόσμου καὶ εἰ ἔμψυχος καὶ προνοία διοικούμενος καὶ ποῦ ἔχει τὸ ἡγεμονικὸν καὶ πόθεν τρέφεται |
| I.2I.6d    | Φιλόλαος  |
| S1         | —ἐν τῷ μεσαιτάτῳ πυρί, ὅπερ τρόπεως δίκην προὔπεβάλλετο τῇ τοῦ παντός (σφαίρα) ὁ δημιουργὸς θεός. |
| I.2I.6e    |   |
| S2         | Κλέανθης ὁ Στωικὸς ἐν ἡλίῳ ἔφησεν εἶναι τὸ ἡγεμονικὸν τοῦ κόσμου.                                 |
| S3         | Ἀρχέδημος τὸ ἡγεμονικὸν τοῦ κόσμου ἐν γῇ ὑπάρχειν ἀπεφήνατο.                                      |

The first of these doxai is coalesced with another lemma containing a doxa of Philolaus (= A 2.5.3\*). The other two, attributed to Cleanthes and Archedemus, follow straight on.

2. Diels *DG* 62 suggested on the basis of the chapter title recorded in S that these belonged to a separate chapter of A not preserved in P. He might have added that the chapter title is confirmed by the evidence of Photius (§167, 112b6 Henry). We agreed with this hypothesis; see Vol. I:186. He also recognized that the best place of this chapter was after P 2.5, as he notes in the apparatus at *DG* 332b19. There is, after all, a clear connection of thought between ¶3, ¶4 and ¶5 (living being → genesis and destruction → food) and also, as we shall argue, between this material and the next chapter A 2.6. But he did not follow up this insight in his reconstruction. Because he wanted to retain the

framework of P's chapters at all costs, he printed this material at the end of A 2.4, giving it a separate sub-title.

3. There can be no doubt that, as part of our unified reconstruction, we must place this material in a separate chapter. As for its location, it should be first noted that S himself is not quite consistent in his placement. In the title the chapter's subject stands before that of P 2.5. In the excerpts, however, the Philolaic lemma from P 2.5 is cited first and then the three lemmata from our chapter are added. In terms of the subject-matter, however, it is clear that the chapter must be placed after A 2.5\*. If the cosmos is a living being, as assumed in ¶3 and ¶5, its rational movements must have a source, i.e. its directive part. As in the case of ch. 2a we try to deviate from P's numbering as little as possible, so we number the chapter 5a.

4. S, as we know, is conscientious in his preservation of material but free in his manner of adaptation, both in terms of organization and language. What changes did he make in writing out this chapter? Diels simply retained the order as found in the anthology. But the possibility must be entertained that the original sequence may well have been disturbed by the coalescence of the Philolaic doxa. It is in our view more likely, for two reasons, to have come last. Firstly, it is an unusual view, and A tends to place these at the end of the chapter (but so is the view of Archedemus). It is noteworthy that in A 2.5\*, 2.7\* and in P 3.11 Philolaus also brings up the rear. Secondly, this placement would yield a more logical sequence, which is also a component of A's method.<sup>156</sup> We readily admit, however, that certainty cannot be reached.

Did, however, the doxa of Cleanthes begin the chapter? As we shall see below, the view that the regent part is located in the sun was a

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<sup>156</sup> For a discussion of Philolaus' doxa see Huffman (1993) 400–401. He notes that both the idea of a demiurge and the image of a keel, implying that the central fire was the first part of the cosmos to be created, are unlikely to go back to the Pythagorean philosopher. He concludes (401) that 'the whole testimonium is not so much a report of Philolaus' views as a description of the role of the central fire in terms of later philosophical conceptions'. The same image is found at P 5.17.2 for what is first formed in the womb. As Diels *DG* 186 notes, it may have been derived from *Metaph.* Δ 1 1013b5, where Aristotle gives the πλοίου τρόπος as an example of the term ἀρχή in the meaning 'that which needs to be present so that a thing can come into being'. It can hardly be a coincidence that he goes on to give the example of the heart or brain for man's beginning, i.e. the ἡγεμονικόν in later terminology! See further Mansfeld's discussion at (1990a) 3212.

minority position even in the Stoic school. What Diels did not take into consideration is that at the beginning of the chapter S gives a summary of Platonic doctrine in which the theme of the cosmos' regent part is mentioned:

1.21.1

S<sub>4</sub>

Πλάτωνος.

Πλάτων τὸν κόσμον ἔφησε ζῶον ἔμψυχον ἔνουν τε, ὅτι τε ἀφ' ἑαυτοῦ τρέφεται, τὸ δὲ ἡγεμονικὸν τοῦ κόσμου ἐν οὐρανῷ τίθεται.

It is highly likely that S derived this information about the regent part from A, since it is by no means a common doxographical report (we have found only a rather general parallel in Proclus) and it cannot be directly deduced from the text of *Ti.* 30a2–c1 that he cites straight after the summary (it speaks only of νοῦν ἐν ψυχῇ). The fact that Cleanthes is emphatically named ὁ Στωικός also suggests that the first lemma was not a Stoic one. A's words cannot be recovered, so we must derive the text in our reconstruction from what we find in S. In the two doxai S<sub>2</sub> and S<sub>3</sub> the verbs are almost certainly added by S (cf. Vol. I:231, 265) and should thus be left out, as well as the otiose subject of the doxa. The resultant 'bald' style is rather similar to A 2.2\*, 2.22\*, 2.27\*. We note also the parallel chapter P 4.5 on the ruling part of the human being, which has a similar style. We return to this parallel below.

It is likely, therefore, that the Platonic doxa, which gives the most common and general view, i.e. that the regent part was in the heaven, came first, followed by three alternative opinions. The second chooses one particular part of the heaven. The third shifts the ἡγεμονικόν to the earth, while the final view is in a sense a variant on the third, since the central fire takes over the place of the earth.

5. Further insight is yielded by various dialectical-doxographical parallels. The cosmological application of the notion of the ἡγεμονικόν or regent part was developed by the Stoa, building on ideas developed by Plato in the *Timaeus* and comments by Aristotle in response to Pythagorean views.<sup>157</sup> Most parallels focus on the views of this school. In Diogenes Laertius, Cicero's *Academica* and Arius Didymus we learn about disagreements in the Stoic school on this question. There is a

<sup>157</sup> Aristotle does not mention Philolaus at *Cael.* 2.13, but surely has him in mind; cf. Huffman (1993) 239. Note his use of the term τὸ κυριώτατον for what is most important in the cosmos, i.e. anticipating the notion of τὸ ἡγεμονικόν. Hahm (1977) 150 argues that the concept of a cosmic regent part was a specific innovation of Cleanthes.

limited correlation with the views found in A. Cleanthes' distinctive view that the sun is the regent part is found in all three texts. The majority view is that the αἰθήρ—aether is the regent part, attributed to Zeno and most of the school (Cicero), Antipater—Chrysippus—Posidonius (Diogenes) or just Chrysippus (Arius Didymus, cf. Philodemus). The anonymous doxa in AD is the same as that attributed to the 2nd cent. Stoic Archedemus.<sup>158</sup> The three texts taken together suggest an anterior doxographical tradition. A leaves out any *laudationes* (as in D.L.) and any argumentation.

It would seem therefore that this chapter presents a cosmological theme that has passed through the filter of Stoic philosophy. Plato and Philolaus are pressed into a scheme that is expressed in Stoic terms. In the case of Plato this was not difficult on account of the central role played by the world-soul in the cosmology of the *Timaeus* (which, as noted above, probably influenced the early Stoics). We learn in both Theon and Proclus that there was speculation about what the middle part of the cosmos mentioned in *Ti.* 34b3 was. Theon distinguishes between the actual centre (τὸ μέσον τοῦ πράγματος) of the ζῶον and the physical centre (τὸ μέσον τοῦ μεγέθους).<sup>159</sup> Proclus in discussing this text gives a very interesting range of possibilities, moving in a reverse direction to A from the centre to the periphery: centre (of the earth), moon, sun, celestial equator, zodiac.<sup>160</sup> Like A, but unlike the Stoic sources, Proclus uses a formula with ἐν, i.e. the ruling part is *in* the sun and not identified with it.

A final point to bear in mind is that the analogy between a living being (or human being) and the cosmos as a whole was not only basic to the development of the doctrine, but also played an important role in its doxographical appropriation. At P 4.5 A has a long chapter entitled Περί τοῦ ἡγεμονικοῦ,<sup>161</sup> i.e. on the ruling part of the human being (the only sub-lunary animal possessing intellect), which makes extensive use of diaereses and in general terms moves from the top of the head to

<sup>158</sup> But we note that in a text in Simplicius (text below) Archedemus is credited with the view that the central fire is the ἡγεμονικόν, i.e. the same as the earlier Pythagorean view. So it is possible that the doxa in A is in fact based on a misunderstanding (but it is also found in AD).

<sup>159</sup> But he speaks about the sun not as the ἡγεμονικόν but as the καρδία of the cosmos (for the Stoa the two are the same in man). For a creative use of the paradox involved—if the ἡγεμονικόν is the heaven then the centre is at the periphery—see Philo *Mos.* 2.194.

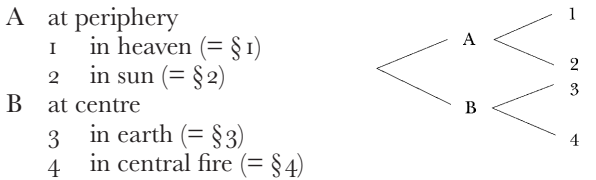
<sup>160</sup> Cf. *Schol. ad Arat.* 545, 446.23 Maass, where the ἡγεμονικόν is placed in Aries!

<sup>161</sup> On this chapter, which is not present in S, but well paralleled in T, see Mansfeld (1990a) 3092–3099.

the diaphragm. Analogies between head and heaven at the periphery and between the heart and the earth at the centre are easy to see. In addition at P 4.21 there is a long Stoic doxa on the question πόθεν αἰσθητικὴ γίνεται ἢ ψυχὴ καὶ τί αὐτῆς τὸ ἡγεμονικόν (where does the soul possessing perception come from and what is its ruling part), which explicitly refers to the analogy between the regent part in the soul and in the cosmos (text cited below).

6. It is possible to interpret the four doxai as a list in a type C diaeresis. But in light of the parallels just cited, it is better to divide the four doxai into two groups of two, the former group placing the regent part at the periphery of the cosmos, the latter at its centre. We shall see that the same dichotomous division is implied at the beginning of 2.6\*. This means we have a type A diaeresis, each of the poles of which is then further divided elaborated with two positions. There is a movement from the outer perimeter to the very centre of the spherical universe. It might be difficult to imagine anything more central than the earth, but in the Philolaic universe the central fire is in fact more central. So for the systematic doxographer this doxa is a happy choice.<sup>162</sup>

STRUCTURE (see above sect. 6)



RECONSTRUCTED TEXT

⟨εΰ. Ποῦ ἔχει τὸ ἡγεμονικὸν ὁ κόσμος⟩<sup>1</sup>

- 1 Πλάτων τὸ ἡγεμονικὸν τοῦ κόσμου ἐν οὐρανῷ τίθεται<sup>2</sup>.
- 2 Κλέανθης ὁ Στωικὸς ἐν ἡλίῳ<sup>3</sup>.
- 3 Ἀρχέδημος ἐν γῇ<sup>4</sup>.
- 4 Φιλόλαος ἐν τῷ μεσαιτάτῳ πυρί, ὅπερ τρόπεως δίκην προὔπεβάλ-  
λετο τῇ τοῦ παντός ⟨σφαίρα⟩<sup>5</sup> ὁ δημιουργὸς θεός.

<sup>162</sup> Even if it is far removed from what Philolaus ever wrote; see n. 156 above.

- 
- 1 caput intercidit in P: titulum excerpisit e S titulo Diels
  - 2 coniecimus e S; vide supra
  - 3 ἔφησεν εἶναι τὸ ἡγεμονικὸν τοῦ κόσμου addidit S
  - 4 τὸ ἡγεμονικὸν τοῦ κόσμου ὑπάρχειν ἀπεφάνητο addidit S
  - 5 Heeren Diels *DG* Wachsmuth; mss. τῆς τοῦ παντός; Diels *VS* Huffman τῆς τοῦ παντός (σφαίρας)
- 

§ 1–; § 2 *SVF* 1.499; § 3 *SVF* fr. 15; § 4 44A17 DK

5a. Where does the cosmos have its regent part

- 1 Plato places the ruling part of the cosmos in the heaven.
- 2 Cleanthes the Stoic (locates it) in the sun.
- 3 Archedemus (locates it) in the earth.
- 4 Philolaus (locates it) in the innermost fire, which the craftsman god first set under the sphere of the universe like a keel.

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Plato** *Ti.* 34b, 36c. **Aristotle** *Cael.* 2.13, esp. 293b2–9, ἔτι δ' οἷ γε Πυθαγόρειοι καὶ διὰ τὸ μάλιστα προσήκειν φυλάττεσθαι τὸ κυριώτατον τοῦ παντός, τὸ δὲ μέσον εἶναι τοιοῦτον, Διὸς φυλακὴν ὀνομάζουσι τὸ ταύτην ἔχον τὴν χώραν πῦρ ... καίτοι καθάπερ ἐν τοῖς ζώοις οὐ ταῦτόν τοῦ ζώου καὶ τοῦ σώματος μέσον, οὕτως ὑποληπτέον μᾶλλον καὶ περὶ τὸν ὅλον οὐρανόν ... **Stoics** *ap.* D.L. 7.139, οὕτω δὴ (sc. as in the human being) καὶ τὸν ὅλον κόσμον ζῶον ὄντα καὶ ἐμψυχον καὶ λογικόν, ἔχειν ἡγεμονικὸν μὲν τὸν αἰθέρα, καθά φησιν Ἀντίπατρος ὁ Τύριος ἐν τῷ ὀγδόῳ *Περὶ κόσμου*. Χρύσιππος δ' ἐν τῷ πρώτῳ *Περὶ προνοίας καὶ Ποσειδώνιος* ἐν τῷ *Περὶ θεῶν* τὸν οὐρανόν φασὶ τὸ ἡγεμονικὸν τοῦ κόσμου, Κλεάνθης δὲ τὸν ἥλιον. ὁ μὲντοι Χρύσιππος διαφορώτερον πάλιν τὸ καθαρώτερον τοῦ αἰθέρος ἐν ταύτῳ, ὃ καὶ πρῶτον θεὸν λέγει ... (cf. **Philodemus** *Piet.* 545.27–28 Diels, also ed. Schober *CronErc* 18 (1988) 118 = *SVF* 2.1076, ἀλλὰ μὴν καὶ Χρύσιππος ... ἐν μὲν τῷ πρώτῳ *Περὶ θεῶν* ... φησὶν Δία ... τὸν τε κόσμον ἐμψυχον εἶναι καὶ θεὸν καὶ τὸ ἡγεμονικὸν καὶ τὴν ὅλην ψυχὴν). **Cicero** *N.D.* 1.39 (part of Velleius' long list of theological doxai), Chrysippus ... ait ... vim divinam in ratione esse positam et in universae naturae animo atque mente, ipsumque mundum deum dicit esse et eius animi fusionem universam, tum eius ipsius principatum qui in mente et ratione versetur...; *Ac.* 2.126, an Stoicis ipsis inter se disceptare, cum iis non licebit? Zenoni et reliquis fere Stoicis aether videtur summus deus, mente preaeditus qua omnia regantur, Cleanthes, qui quasi maiorum est gentium Stoicus, Zenonis auditor, solem dominari et rerum potiri putat; ita cogimur dissensione sapientium dominum nostrum ignorare, quippe qui nesciamus soli an aetheri serviamus. **Cornutus** *Comp. Theol. Gr.* 35.14, 49.8 Lang. **Plutarch** *De Stoic repugn.* 1053C, *De comm. not.* 1075D. **Aëtius** *ap.* ps.Plu. 4.21 (Stoic doxa on ruling part of the soul), αὐτὸ δὲ τὸ ἡγεμονικὸν ὥσπερ ἐν κόσμῳ κατοικεῖ ἐν τῇ ἡμετέρᾳ σφαιροειδεῖ κεφαλῇ. **Arius Didymus** *ap.* Eus. *PE* 15.15.7–8 (= Diels fr. 29), ἡγεμονικὸν δὲ τοῦ κόσμου Κλεάνθει μὲν ἦρεσε τὸν

ἥλιον εἶναι διὰ τὸ μέγιστον τῶν ἄστρον ὑπάρχειν ... τισὶ δὲ τῶν ἀπὸ τῆς αἰρέσεως ἔδοξε γῆν τὸ ἡγεμονικὸν εἶναι τοῦ κόσμου, Χρυσίππῳ δὲ τὸν αἰθέρα τὸν καθαρώτατον καὶ εἰλικρινέστατον, ἅτε πάντων εὐκίνητότατον ὄντα καὶ τὴν ὅλην περιάγοντα τοῦ κόσμου φοράν. **Theon Smyrnaeus** *Expos.* 187.20–88.7 Hiller, ἄλλο γὰρ ἐν τοῖς ἐμψύχοις τὸ μέσον τοῦ πράγματος, τουτέστι τοῦ ζώου ἢ ζώου, καὶ ἄλλο τοῦ μεγέθους· οἶον, ὥς ἔφαμεν, ἡμῶν αὐτῶν ἄλλο μὲν, ὥς ἀνθρώπων καὶ ζώων, τῆς ἐμψυχίας μέσον τὸ περὶ τὴν καρδίαν ... τοῦ δὲ μεγέθους ἡμῶν ἕτερον μέσον, οἶον τὸ περὶ τὸν ὀμφαλόν. ὁμοίως δὲ καὶ τοῦ κόσμου παντός ... τοῦ μεγέθους μέσον τὸ περὶ τὴν γῆν κατεψυγμένον καὶ ἀκίνητον· ὥς κόσμου δὲ καὶ ἡ κόσμος καὶ ζῶον τῆς ἐμψυχίας μέσον τὸ περὶ τὸν ἥλιον, οἶονεὶ καρδίαν ὄντα τοῦ παντός ... **Alexander of Aphrodisias** *ap.* Simp. *in Cael.* 513.7–9 (on Archedemus). **Sextus Empiricus** *Adv. phys.* 1.121–122. **Origen** *C. Cels.* 4.14 (= *SVF* 2.1052). **Eusebius** *PE* 3.9.9 (against Porphyry, = *SVF* 2.1032), κατὰ τοὺς Στωϊκοὺς τὴν πυρώδη καὶ θερμὴν οὐσίαν τὸ ἡγεμονικὸν φάσκοντας εἶναι τοῦ κόσμου ... **Ps.Iamblichus** *Theol. arith.* 4.1 De Falco (on the monad). **Proclus** *in Ti.* 2.104.23 Diehl (exeg. *Ti.* 34b3 τὸ μέσον), καὶ οἱ μὲν ἐν τῷ κέντρῳ τὸ ἡγεμονικὸν ἀποτίθενται τοῦ παντός, οἱ δὲ ἐν σελήνῃ, οἱ δὲ ἐν ἡλίῳ, οἱ δὲ ἐν τῷ ἡμερινῷ, οἱ δὲ ἐν τῷ ζωδιακῷ. **Simplicius** *in Cael.* 512.20–13.32, ταύτης δὲ τῆς δόξης (i.e. that fire is at the centre of the universe) νεώτερος μὲν τοῦ Ἀριστοτέλους Ἀρχέδημος γέγονε, πρὸ δὲ Ἀριστοτέλους τίνες οὕτως ἐδόξασαν, ἐκ τῆς ἱστορίας, φησὶν Ἀλέξανδρος, ζητητέον.

## Aëtius *Placita* 2.6

Ἀπὸ ποίου πρώτου στοιχείου ἤρξατο κοσμοποιεῖν ὁ θεός

### WITNESSES

Ps.Plutarch 2.6, Eusebius 15.37, ps.Galen 49, Qusṭā Ibn Lūqā 2.6

Stobaeus 1.21.3b, 6c, 22.1f

Cf. Achilles 6, 7

### ANALYSIS

1. After the chapters on the cosmos as living being A now reverts back to the question of the cosmos' genesis and broaches the subject of how this process took place. The present chapter thus follows on neatly from 2.4 when the question of the cosmos' genesis was posed. If the cosmos did come into being, how did the process of genesis commence? It is quite surprising, however, to read that the chapter heading formulates the subject in theological terms, even though there is no mention of a creating god in the body of the chapter itself. It will be a challenge to try to explain how and why this anomaly occurs. As in previous chapters there is a parallel chapter on the microcosm, P 5.22 Ἐκ ποίων συνίσταται στοιχείων ἕκαστον τῶν ἐν ἡμῖν γενικῶν μορίων. The subject of how the cosmos came to exist has already been treated in Book I in ch. 4 entitled Πῶς συνέστηκεν ὁ κόσμος. On how the treatments in Books I and II are related see our discussion in Part I sect. 2.

2. As in ch. 5 P and his tradition are the fullest witnesses, recording six lemmata in total:

ς'. Ἀπὸ ποίου πρώτου στοιχείου ἤρξατο κοσμοποιεῖν ὁ θεός

- P2.6.1 οἱ φυσικοὶ ἀπὸ γῆς ἄρξασθαί φασι τὴν γένεσιν τοῦ κόσμου  
κατὰπερ ἀπὸ κέντρου· ἀρχὴ δὲ σφαίρας τὸ κέντρον.
- P2.6.2 Πυθαγόρας ἀπὸ πυρὸς καὶ τοῦ πέμπτου στοιχείου.
- P2.6.3 Ἐμπεδοκλῆς τὸν μὲν αἰθέρα πρῶτον διακριθῆναι, δεύτερον δὲ  
τὸ πῦρ ἐφ' ᾧ τὴν γῆν, ἐξ ἧς ἄγαν περισφιγμένης τῇ ὀύμῃ τῆς  
περιφορᾶς ἀναβλύσαι τὸ ὕδωρ· ἐξ οὗ <ἀνα>θυμιαθῆναι τὸν ἀέρα  
καὶ γενέσθαι τὸν μὲν οὐρανὸν ἐκ τοῦ αἰθέρος τὸν δ' ἥλιον ἐκ τοῦ  
πυρὸς, πληθῆναι δ' ἐκ τῶν ἄλλων τὰ περίγεια.
- P2.6.4 Πλάτων τὸν ὁρατὸν κόσμον γεγενῆσθαι πρὸς παρὰδειγμα τοῦ



- νοητοῦ κόσμου· τοῦ δ' ὁρατοῦ κόσμου προτέραν μὲν εἶναι τὴν  
 ψυχὴν, μετὰ δὲ ταύτην τὸ σωματοειδὲς τὸ ἐκ πυρὸς μὲν καὶ γῆς  
 πρῶτον, ὕδατος δὲ καὶ ἀέρος δεύτερον.
- P2.6.5 Πυθαγόρας πέντε σχημάτων ὄντων στερεῶν, ἅπερ καλεῖται καὶ  
 μαθηματικά, ἐκ μὲν τοῦ κύβου φησὶ γεγονέναι τὴν γῆν, ἐκ δὲ  
 τῆς πυραμίδος τὸ πῦρ, ἐκ δὲ τοῦ ὀκταέδρου τὸν ἀέρα, ἐκ δὲ τοῦ  
 εἰκοσαέδρου τὸ ὕδωρ, ἐκ δὲ τοῦ δωδεκαέδρου τὴν τοῦ παντός  
 σφαῖραν.
- P2.6.6 Πλάτων δὲ καὶ ἐν τούτοις πυθαγορίζει.

There are some variants in the tradition. In the title E surprisingly leaves out the word *στοιχείου* and in the rest of the chapter deviates from P on a number of occasions.<sup>163</sup> In the margin of a manuscript of P an early reader or scribe offers an alternative title, *πόθεν ἄρχεται ὁ κόσμος καὶ ἐκ ποίων στοιχείων*. He must have noticed that the chapter does not mention God. This alternative title certainly suits the main body of the chapter better.<sup>164</sup> G gets one of the name-labels wrong (*Διοκλῆς* instead of *Ἐμπεδοκλῆς*).

3. S's procedure is more problematic. Surprisingly, in spite of the fact that the title sounds quite Platonic, he does not appear to find the subject of great importance. He does not include it in any of his own titles, and feels free to dispatch the lemmata to various locations. We can locate four of the six lemmata:

- I.21 title Περί κόσμου καὶ εἰ ἔμψυχος καὶ προνοία διοικούμενος καὶ ποῦ  
 ἔχει τὸ ἡγεμονικόν καὶ πόθεν τρέφεται
- I.21.3b οἱ Στωικοί
- S1 —ἀπὸ γῆς δὲ ἄρξασθαι φασὶ τὴν γένεσιν τοῦ κόσμου, καθάπερ  
 ἀπὸ κέντρων· ἀρχὴ δὲ σφαῖρας τὸ κέντρον.
- I.21.6c
- S2 Πυθαγόρας  
 —ἄρξασθαι δὲ τὴν γένεσιν τοῦ κόσμου ἀπὸ πυρὸς καὶ τοῦ  
 πέμπτου στοιχείου.
- S3 —πέντε δὲ σχημάτων ὄντων στερεῶν, ἅπερ καλεῖται καὶ  
 μαθηματικά, ἐκ μὲν τοῦ κύβου φησὶ γεγονέναι τὴν γῆν, ἐκ δὲ  
 τῆς πυραμίδος τὸ πῦρ, ἐκ δὲ τοῦ ὀκταέδρου τὸν ἀέρα, ἐκ δὲ τοῦ  
 εἰκοσαέδρου (τὸ ὕδωρ, ἐκ δὲ τοῦ δωδεκαέδρου) τὴν τοῦ παντός  
 σφαῖραν.

<sup>163</sup> The variations are not of great significance; see the apparatus of the reconstructed text below. The omission of *στοιχείου* in the title is intelligent, since the mention of 'element' does not fit P4–5 very well.

<sup>164</sup> Cf. not only the title of P 5.22 cited above, but also 5.23 *Πότε καὶ πῶς ἄρχεται ὁ ἀνθρώπος τῆς τελειότητος*.

- 1.22 title    Περί τάξεως τοῦ κόσμου  
 1.22.1f  
 S<sub>4</sub>            Πλάτων τὸν ὄρατὸν κόσμον γεγονέναι παράδειγμα τοῦ νοητοῦ  
               κόσμου· τοῦ δὲ ὄρατοῦ προτέραν μὲν τὴν ψυχὴν, μετὰ δὲ ταύτην  
               τὸ σωματοειδές, τὸ ἐκ πυρὸς μὲν καὶ γῆς πρῶτον, ὕδατος δὲ καὶ  
               ἀέρος δεύτερον.

As noted above, S does not include A's title in his chapter headings.<sup>165</sup> The first lemma (cf. P<sub>1</sub>) is absorbed into a group of Stoic doxai (it is added to A 2.1.9\*, 2.2a.3\*), i.e. S must have found the name-label as οἱ Στωικοί in his text rather than οἱ φυσικοὶ as in P (unless he carelessly coalesced the two groups).<sup>166</sup> The two Pythagorean doxai form part of a cluster, in which they are added to A 2.4.1\* and 2.1.1\*. To make the subject clear he has to add the initial words ἀρξασθαι τὴν γένεσιν. It does not bother him that the first doxa in the group declares that for Pythagoras the cosmos is only conceptually created. P<sub>3</sub> on Empedocles is nowhere to be found in S. Such an omission is a rare occurrence (cf. Vol. I:233–236). It is probably the result of an oversight, since a placement in ch. 22 Περί τάξεως τοῦ κόσμου would have been logical (other nearby Empedoclean doxai are grouped together at §15.6d, but this doxa would have been even more out of place in the chapter Περί σχημάτων than the others). The first Platonic lemma (= P<sub>4</sub>) is found in S's next chapter as part of a miscellany on the cosmos' τάξις. It appears that S is above all interested in the mention of soul and of body consisting of the four elements, for he follows the lemma with a quotation of *Ti.* 32c5–33a2. The omission of πρὸς in the phrase πρὸς παράδειγμα τοῦ νοητοῦ κόσμου is remarkable. It is doubtful whether S would have made such a serious mistake. The final lemma in P, a brief comment appended to the second Pythagorean doxa, is left out. S could have added it to 1.21c, but presumably he felt that the subject was covered elsewhere. The Platonic theory of the cosmic elements (but not their shapes) is treated in 1.20.8, 1.22.1f.

There are no other isolated lemmata in S that we might suspect originally belonged in A's chapter. In addition, because the lemmata have been scattered, he can be of no assistance in establishing its original sequence and structure.

<sup>165</sup> Diels *DG* 333 does print a title, but this is taken from ms. L, which is contaminated from P; cf. Vol. I:267 (where, however, we did not discuss the case of the additional titles from Book II). The same occurs in ch. 8–10.

<sup>166</sup> As suggested in Part I sect. 9 at n. 266.

4. T does not allude to this chapter, so the only other evidence is found in Ach. It is curious and not easy to interpret. First a version of the fifth lemma in P is given as the concluding lines of the chapter *Περὶ σχήματος κόσμου*:<sup>167</sup>

*Isagoge* 6, 37.29–38.2 Maass ~ 17.10–13 Di Maria

οἱ δὲ Πυθαγόρειοι, ἐπεὶ πάντα ἐξ ἀριθμῶν καὶ γραμμῶν συνεστάναι θέλουσι, τὴν μὲν γῆν φασιν ἔχειν σχῆμα κυβικόν, τὸ δὲ πῦρ πυραμοειδές, τὸν δ' ἀέρα ὀκτάεδρον, τὸ δὲ ὕδωρ εἰκοσάεδρον, τὴν δὲ τῶν ὅλων σύστασιν δωδεκάεδρον.

Most of the chapter argues for the sphericity of the cosmos and the circular revolution of the heavenly bodies (notably the sun). The final doxa is meant, it seems, to introduce a contrast. But it is clumsily done, since only the final phrase refers to a cosmological entity, i.e. the universe. The rest refers to elements, just as in A.

The second piece of evidence is a complete but very brief chapter entitled *Περὶ περιφορᾶς*:

*Isagoge* 7, 38.3–9 Maass ~ 17.14–19 Di Maria

οἱ Στωικοὶ φασὶ ἐκ τῆς γῆς τὴν ἔξωθεν γίνεσθαι πρῶτον περιφορὰν ἐπεὶ γὰρ ἡ γῆ κέντρου τάξιν ἐπέχει, ὅπως περ ἀπὸ κέντρου κύκλος γίνεται, οὕτω καὶ ἀπὸ τῆς γῆς εἰκὸς ἔξω περιφέρειαν γεγενέσθαι. οἱ δὲ φασὶ τὸ πῦρ (διὰ τὸ) ἀνωφερές εἶναι καὶ τὴν κύκλῳ φορὰν εἰωθὸς ποιεῖσθαι τὴν σύστασιν τῆς τῶν ὅλων περιφορᾶς πεποιῆσθαι.

The similarity with the first two lemmata in P cannot be missed. Yet the purpose for which the two authors use them appears to be quite different. The main emphasis in A is on cosmic genesis, and there is only an incidental reference to the universe's revolution (the cosmic whirl is mentioned in the Empedoclean doxa, τῇ ῥύμῃ τῆς περιφορᾶς, cf. also the end of his ch. 5, τὴν τοῦ παντὸς σφαίραν). In Ach, on the other hand, we read nothing about the god starting to form the cosmos from a particular element; only the word πρῶτον in the first line is suggestive of A's chapter. The material in the two chapters is linked, but in each case has been adapted to a different usage.

Despite this difference, Ach's evidence is valuable. He has the name-label οἱ Στωικοὶ for the first group, giving support to S's reading of the name-label in S1 as opposed to οἱ φυσικοὶ in P1. The name-label must be retained, as Von Arnim *SVF* 2.582–583 rightly saw. On the

<sup>167</sup> The references to A are missing in Maass, who was misled by Diels. Di Maria includes the reference to A in §6, but misses the ones in the next chapter.

other hand, it would be cavalier to dismiss P's reading out of hand. The best solution is to retain both names in the presumption that S had no use for the more general label.<sup>168</sup> Additional evidence is found in §4 entitled Περί τῆς συστάσεως τοῦ ὅλων. Ach discusses the structure of the cosmos in terms of the separation of the elements and the role of heavy and light, but this time there is no direct link to A.

5. The chapter must thus be taken basically as it has been preserved—probably fully—in P. How should its purpose and structure be interpreted? As noted above in sect. 1, the body of the chapter does not continue the theological emphasis of the title, but focuses first on the cosmic elements which first appeared in the cosmos' formation. There is a possible link with the parallel chapter in Ach, but there the topic is the cosmos' revolution. The evidence can be interpreted as suggesting that A took the chapter in his doxographical source and converted it into a chapter on the beginning of genesis. This certainly seems plausible if we compare his first two lemmata with those in Ach's chapter. On the other hand, as we shall see in sect. 7 below, there is also a tradition going back to Aristotle in which philosophers' theories on how the cosmos got underway are discussed and compared. It is in any case clear that the changes made by A take place under the influence of Middle Platonism, which relies heavily on the *Timaeus* for its cosmology. P4 is a compact paraphrase of the *Timaeus* (30c–32c, 34b–c) and the elemental theory in P5–6 is also based on the same dialogue (53c–55c).<sup>169</sup> Moreover, given this strong influence of the *Timaeus*, it is very likely that A himself introduced the mention of a creating deity in the title. For a surmisal of what the title might have been in the anterior tradition see the end of our analysis below.

<sup>168</sup> As suggested in Part I sect. 9 at n. 262. There are many lemmata in A where the Stoics are added to other name-labels, e.g. P 1.8.2, 1.9.2, 1.29.4, A 2.17a.1\*, P 5.22.1 (with καί), 5.23.4 (juxtaposed) etc.

<sup>169</sup> Diels, followed by Kranz and Guthrie (1962–1981) 1.267, printed this lemma as a testimonium of Philolaus, arguing that the implicit attribution to Philolaus went back to Theophrastus as shown by the similarity to B12 in Theon Smyrnaeus. But it is much more likely that it reflects the Neopythagorizing tendencies of a later period. See the discussion in Huffman (1993) 393–394. Similarly the reference to the fifth element in the second lemma should be seen as a later reinterpretation, *pace* Moraux (1963) 1176–1180, who follows Diels in referring this report via Posidonius back to Theophrastus. The doctrine of the fifth element is not unknown in Middle Platonist cosmology, and is even attributed to Plato himself; cf. Dillon (1996) 216. On the term 'noetic cosmos' see below n. 173.

6. Against this background, how can the structure and purpose of the chapter as we find it in A be explained? It would seem that it gives a list of five answers to the question posed in its title. The first two form a direct contrast between genesis beginning at the centre with the earth<sup>170</sup> and genesis beginning at the outer limit in the heavenly realm consisting of fire and ether.<sup>171</sup> As noted above, there is continuity with the thematics of the previous chapter, where there was a similar opposition between the two extremities of the cosmos. On the other hand, there is a striking discontinuity with the title of the chapter. The subject of both doxai is not a creating god, as the title might lead us to expect, but the cosmos' γένεσις.

The third doxa appears to make a deliberate contrast with the preceding one. Instead of the process beginning with fire and the fifth element (i.e. ether),<sup>172</sup> it now starts with ether, followed by fire, earth, water and air. The fuller account, with its sequence of vivid verbs and participles of motion, is not required to answer the question posed in the chapter heading, but the doxographer gives it anyway. The fourth Platonic doxa adds a new aspect by commencing the cosmos' genesis not from a physical element, but from the intelligible model,<sup>173</sup> followed by soul and body (including the elements). It is remarkable, given the chapter's title, that A in fact does not mention the role of the Demiurge in this lemma.

In the fifth doxa attributed to Pythagoras we find a different approach: the four primary elements and the sphere of the universe are described as taking their genesis from the primary geometrical solids, i.e. the starting-point this time is the mathematical realm, which—just like the model in the previous doxa—is incorporeal. We recall the remark of Ach in his equivalent doxa when he says of the Pythagoreans: ἐπεὶ πάντα ἐξ ἀριθμῶν καὶ γραμμῶν συνεστάναι θέλουσι. The doxa is of course another importation from the Pythagoreanizing *Timaeus*, as was

<sup>170</sup> On this lemma see further Part I sect. 9 text after n. 266.

<sup>171</sup> Admittedly this is an assumption. It is possible that the Pythagorean fire refers to the central fire of the Philolaic system, but then the coupling with the fifth element is very odd.

<sup>172</sup> One assumes the order is important here. It is of course historically absurd to attribute the notion of a fifth element to Pythagoras, but it makes sense in a Middle Platonic and Neopythagorean perspective.

<sup>173</sup> This text is a very early example of the term νοητὸς κόσμος, also found in P 1.7.28. For the Middle Platonist background see Runia (1999c) 158–160.

already noted above. This is observed by A himself in the sixth doxa, which should be seen as an appendix to the previous doxa rather than a doxa in its own right.

The chapter thus gives a list of five answers to the question posed in its title. The first three refer to physical elements but take contrasting positions, the second opposed to the first, the third to the second. The final two views both give the answer with reference to the incorporeal realm, first the intelligible model, then the perfect geometrical figures. In structural terms the five answers form a type C diacresis, containing within it two contrasting pairs.

7. A final aspect of the chapter that deserves to be examined is the use of the term *κοσμοποιεῖν* in the title (it does not recur in the body of the chapter). The term and its corresponding adjective occur another five times in the *Placita*. In speaking of the *ἀρχαί* at P 1.3.8 A says of Heraclitus and Hippasus that all things are generated out of fire and return to it, and when it is quenched ‘all things are made into a cosmos’ (*κοσμοποιεῖσθαι τὰ πάντα*). At P 1.24.2 we read about Empedocles, Epicurus and ‘all those who make a cosmos (*κοσμοποιοῦσι*) in terms of the aggregation of bodies with light parts (*κατὰ συναθροισμὸν τῶν λεπτομερῶν σωμάτων*)’. A ‘cosmos-making’ role is given to *ἀνάγκη* in P 1.25.3 (attributed to Parmenides and Democritus) and to *nous* in the chapter on God as principle at S 1.1.29b (attributed to Archelaus and Anaxagoras).<sup>174</sup> A slightly different usage is given of the Orphics in 2.13.14\*, who ‘make each of the heavenly bodies into a cosmos’ (*κοσμοποιοῦσι*).

It is intriguing to note that the first usage of this term appears to go back to Aristotle, but he uses it on four occasions not of a deity or some other efficient cause, but of philosophers who make cosmological theories. All four texts occur in a doxographical context (see texts below). At *Cael.* 3.2 301a13 the words *ἐξ ἀκινήτων γὰρ ἄρχεται κοσμοποιεῖν*, which in fact remind us of the title of the present chapter, are used not of the god but of Anaxagoras. In three texts Aristotle picks out Anaxagoras and Empedocles for special mention. Empedocles—but not Anaxagoras—we find back in A. In addition, at *Metaph.* N 3 1091a13–22 Aristotle speaks about the Pythagoreans

<sup>174</sup> Cf. also ps.Plut. *Str.* 12 Diels, where it is said of Diogenes of Apollonia *κοσμοποιεῖ δὲ οὕτως ...*

engaging in ‘cosmos-making’ (κοσμοποιούσι) when they derive all things from numbers. This tradition continues in passages in Nicomachus, Iamblichus and Simplicius (texts below). It would be excessively speculative to see a direct link of these texts with our present chapter, but certainly the text on the Pythagoreans cited above is suggestive in connection with §5. It may be surmised that in the earlier doxographical tradition from Aristotle onwards<sup>175</sup> a point of discussion was how the cosmos got underway, whether from στάσις or κίνησις, whether from mixed elements or from the instigation of a *nous* or from numbers. It can be linked to arguments outside the *Placita* on the causes and processes required to explain the order and workings of the cosmos. For example, Philo in his dialogue *On Providence* records an argument on the opposition between necessity and providence that goes back to Plato *Laws* 10. His account of the distribution of the elements as postulated by Empedocles is very similar to what we find in A.<sup>176</sup> We note too the mention of the central position of the earth and the emphasis on the role of Providence. Remarkably all three themes recur in Plutarch’s *De facie*.<sup>177</sup> It is likely that both authors (and also A) reflect Stoic-Academic discussions that have also left their mark on the *Placita*. We have cited a collection of the relevant texts in the list of dialectical-doxographical parallels below.

In light of this tradition and taking our cue from the parallel at P 1.3.8 mentioned above, it may be suggested that in the tradition prior to A the chapter’s title read Ἀπὸ ποίου πρώτου στοιχείου ἤρξατο κοσμοποιεῖσθαι τὰ πάντα. It was then theologized and Platonized by A.

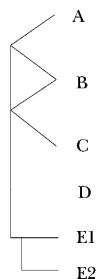
<sup>175</sup> Not in the surviving texts of Theophrastus, including the *Phys. dox.* But, as Diels notes at *DG* 805, Theophrastus does habitually use ποιεῖν of philosophers who makes theories.

<sup>176</sup> The two texts are placed side by side at DK 31A49.

<sup>177</sup> Plutarch adduces Empedocles’ theory in relation to the pre-cosmic situation parallel to the state of things before the Demiurge’s intervention in Plato’s *Timaeus*; cf. 926E–927A. On Plutarch’s use of the *Placita* in this treatise see further below ch. 30 sect. 6.

## STRUCTURE (see above sect. 6)

- A genesis begins with the earth, i.e. at the centre (= § 1)  
 B genesis begins with fire and 5th element, i.e. at the  
 periphery (= § 2)  
 C genesis begins with ether, then fire, and goes further  
 inwards (= § 3)  
 D genesis begins from the model, followed by soul and  
 body (= § 4)  
 E1 genesis of elements begins from geometrical solids  
 (= § 5)  
 E2 addendum



## RECONSTRUCTED TEXT

ζ'. Ἀπὸ ποίου πρώτου στοιχείου<sup>1</sup> ἤρξατο κοσμοποιεῖν<sup>2</sup> ὁ θεός<sup>3</sup>

- 1 οἱ φυσικοὶ καὶ οἱ Στωικοὶ<sup>4</sup> ἀπὸ γῆς ἄρξασθαι φασὶ τὴν γένεσιν τοῦ  
 κόσμου καθάπερ ἀπὸ κέντρου· ἀρχὴ δὲ σφαίρας τὸ κέντρον.  
 2 Πυθαγόρας ἀπὸ πυρὸς καὶ τοῦ πέμπτου στοιχείου.  
 3 Ἐμπεδοκλῆς<sup>5</sup> τὸν μὲν αἰθέρα πρῶτον διακριθῆναι, δεύτερον δὲ  
 τὸ πῦρ ἐφ' ᾧ τὴν γῆν, ἐξ ἧς ἄγαν περισφιγγομένης τῇ ὀύμῃ τῆς  
 περιφορᾶς<sup>6</sup> ἀναβλύσαι τὸ ὕδωρ· ἐξ οὗ <ἀνα>θυμιαθῆναι<sup>7</sup> τὸν ἀέρα  
 καὶ γενέσθαι τὸν μὲν οὐρανὸν ἐκ τοῦ αἰθέρος<sup>8</sup> τὸν δ' ἥλιον ἐκ τοῦ  
 πυρὸς, πλιθῆναι<sup>9</sup> δ' ἐκ τῶν ἄλλων τὰ περὶ γαίαν.  
 4 Πλάτων τὸν ὄρατὸν κόσμον<sup>10</sup> γεγενῆσθαι πρὸς<sup>11</sup> παράδειγμα τοῦ  
 νοητοῦ κόσμου· τοῦ δ' ὄρατοῦ κόσμου προτέραν μὲν εἶναι τὴν  
 ψυχὴν, μετὰ δὲ ταύτην<sup>12</sup> τὸ σωματοειδὲς τὸ ἐκ πυρὸς μὲν καὶ γῆς  
 πρῶτον, ὕδατος δὲ καὶ ἀέρος δεύτερον<sup>13</sup>.  
 5 Πυθαγόρας πέντε σχημάτων ὄντων στερεῶν, ἅπερ καλεῖται καὶ  
 μαθηματικά, ἐκ μὲν τοῦ κύβου φησὶ γεγενῆσθαι τὴν γῆν, ἐκ δὲ  
 τῆς πυραμίδος τὸ πῦρ, ἐκ δὲ τοῦ ὀκταέδρου τὸν ἀέρα, ἐκ δὲ τοῦ  
 εἰκοσαέδρου τὸ ὕδωρ, ἐκ δὲ τοῦ δωδεκαέδρου<sup>14</sup> τὴν τοῦ παντός  
 σφαῖραν.  
 6 Πλάτων δὲ καὶ ἐν τούτοις πυθαγορίζει.

1 πρώτου P<sup>1</sup>EQ, om. P<sup>2</sup>G, στοιχείου om. E

2 ὁ θεός κοσμοποιεῖν EG

3 πόθεν ἄρχεται ὁ κόσμος καὶ ἐκ ποίων στοιχείων P<sup>marg</sup>

4 coniecimus, vide supra, οἱ Στωικοὶ SAch, οἱ φυσικοὶ P

5 Διοκλῆς G

6 σφαίρας E

7 <ἀνα>θυμιαθῆναι conj. Reiske Diels ex G, legit et Q ut videtur

8 ἀέρος Q



- 9 εἰληθῆναι E  
 10 ὁρατὸν τὸν κόσμον EG Diels  
 11 πρὸς om. S  
 12 μετὰ δὲ ταῦτα E  
 13 πρώτων, δευτέρων P<sup>2</sup>E  
 14 τὸ ὕδωρ ἐκ δὲ τοῦ δωδεκαέδρου om. E

§ 1a—; § 1b *SVF* 2.581; § 2—; § 3 31A50 DK; § 4—; § 5 44A15 DK (Philolaus), non recte;  
 § 6—

#### 6. From what kind of first element did the god make the cosmos

- 1 The physicists and the Stoics (declare that) the genesis of the cosmos started from the earth as from the centre; the centre is the starting-point of a sphere.
- 2 Pythagoras (declares that the genesis of the cosmos started) from fire and the fifth element.
- 3 Empedocles (declares that) first the ether was separated out, second fire and after it the earth. When the earth was excessively constricted by the rush of its revolution, water spouted forth. From it the air was exhaled and the heaven came into being from the ether, the sun from fire, while the earthly regions were condensed from the other (elements).
- 4 Plato (declares that) the visible cosmos came into being in relation to the model of the intelligible cosmos. But in the case of the visible cosmos the soul is prior, and after it there is the corporeal part, consisting first of fire and earth, second of water and air.
- 5 Pythagoras says that, since there are five solid shapes, which are also called mathematical, the earth came into being from the cube, fire from the pyramid, air from the octahedron, water from the icosahedron, and the sphere of the universe from the dodecahedron.
- 6 Plato in these matters too pythagorizes.

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Plato** *Lg.* 889b, πῦρ καὶ ὕδωρ καὶ γῆν καὶ ἀέρα φύσει πάντα εἶναι καὶ τύχη φασίν, τέχνη δὲ οὐδὲν τούτων, καὶ τὰ μετὰ ταῦτα αὖ σώματα, γῆς τε καὶ ἡλίου καὶ σελήνης ἄστρον τε πέρι, διὰ τούτων γεγονέναι παντελῶς ὄντων ἀνύχων· τύχη δὲ φερόμενα τῇ τῆς δυνάμεως ἕκαστα ἐκάστων ... **Aristotle** *Ph.* 8.1 250b15–27, εἶναι μὲν οὖν κίνησιν πάντες φασίν οἱ περὶ φύσεώς τι λέγοντες διὰ τὸ κοσμοποιεῖν καὶ περὶ γενέσεως καὶ φθορᾶς εἶναι τὴν θεωρίαν πᾶσαν αὐτοῖς ... ἀλλ’ ὅσοι μὲν ἀπείρους τε κόσμους εἶναι φασιν, καὶ τοὺς μὲν γίνεσθαι τοὺς δὲ φθείρεσθαι τῶν κόσμων, αἱ φασιν εἶναι κίνησιν ... ὅσοι δ’ ἓνα (ἢ αἰεὶ) ἢ μὴ αἰεὶ, καὶ περὶ τῆς κινήσεως ὑποτίθενται κατὰ λόγον. εἰ δὴ ἐνδέχεται ποτε μηδὲν κινεῖσθαι, διχῶς ἀνάγκη τοῦτο συμβαίνειν· ἢ γὰρ ὡς Ἀναξαγόρας λέγει (φῆσιν γὰρ ἐκεῖνος, ὁμοῦ πάντων ὄντων καὶ ἡρεμούντων τὸν ἀπειρον χρόνον, κίνησιν ἐμπούησαι τὸν νοῦν καὶ διακρίναι), ἢ ὡς Ἐμπεδοκλῆς ἐν μέρει κινεῖσθαι καὶ πάλιν ἡρεμεῖν ... *Cael.* 3.2

301a12–20, ἔοικε δὲ τοῦτό γε αὐτὸ καλῶς Ἀναξαγόρας λαβεῖν· ἐξ ἀκινήτων γὰρ ἄρχεται κοσμοποιεῖν. πειρῶνται δὲ καὶ οἱ ἄλλοι συγκρίνοντές πως πάλιν κινεῖν καὶ διακρίνειν. ἐκ διεστώτων δὲ καὶ κινουμένων οὐκ εὐλογον ποιεῖν τὴν γένεσιν. διὸ καὶ Ἐμπεδοκλῆς παραλείπει τὴν ἐπὶ τῆς φιλότητος· οὐ γὰρ ἂν ἡδύνατο συστήσαι τὸν οὐρανὸν ἐκ κεχωρισμένων μὲν κατασκευάζων, σύγκρισιν δὲ ποιῶν διὰ τὴν φιλότητα· ἐκ διακεκριμένων γὰρ συνέστηκεν ὁ κόσμος τῶν στοιχείων· ὥστ' ἀναγκαῖον γίνεσθαι ἐξ ἐνὸς καὶ συγκεκριμένου. *Metaph.* A 4 985a18–24, Ἀναξαγόρας τε γὰρ μηχανῇ χρῆται τῷ νῷ πρὸς τὴν κοσμοποιάν, καὶ ὅταν ἀπορήσῃ διὰ τίν' αἰτίαν ἐξ ἀνάγκης ἐστὶ, τότε παρέλκει αὐτόν, ἐν δὲ τοῖς ἄλλοις πάντα μᾶλλον αἰτιᾶται τῶν γιγνομένων ἢ νοῦν, καὶ Ἐμπεδοκλῆς ἐπὶ πλεον μὲν τούτου χρῆται τοῖς αἰτίοις, οὐ μὴν οὐθ' ἱκανῶς, οὐτ' ἐν τούτοις εὐρίσκει τὸ ὁμολογούμενον. N 3 1091a13–22 οἱ μὲν οὖν Πυθαγόρειοι πότερον οὐ ποιοῦσιν ἢ ποιοῦσι γένεσιν οὐδὲν δεῖ διστάζειν· φανερῶς γὰρ λέγουσιν ὡς τοῦ ἐνὸς συσταθέντος, εἴτ' ἐξ ἐπιπέδων εἴτ' ἐκ χοριάς εἴτ' ἐκ σπέρματος εἴτ' ἐξ ὧν ἀποροῦσιν εἰπεῖν, εὐθύς τὸ ἔγγιστα τοῦ ἀπείρου ὅτι εἴλετο καὶ ἐπεραίνετο ὑπὸ τοῦ πέρατος. ἀλλ' ἐπειδὴ κοσμοποιοῦσι καὶ φυσικῶς βούλονται λέγειν, δίκαιον αὐτοὺς ἐξετάζειν τι περὶ φύσεως, ἐκ δὲ τῆς νῦν ἀφείναι μεθόδου· τὰς γὰρ ἐν τοῖς ἀκινήτοις ζητοῦμεν ἀρχάς, ὥστε καὶ τῶν ἀριθμῶν τῶν τοιούτων ἐπισκεπτέον τὴν γένεσιν. **Chrysippus** *ap.* Alex. *Aphr. De mixtione* 224.32 = *SVF* 2.310. **Philo** *Prov.* 2.60 [Alexander], quam ob rem vasto in medio universorum conditam erexit terram ... necessitate videlicet quadam naturae leviora a gravioribus sursum pelli contigit ... eodem modo et mundi partes affici videntur, ut dicit Empedocles. Discendentibus enim ab aether vento et igne atque volantibus ... 2.62 [Philo] perpende, quod dicis, a gravioribus sursum agi leviora ... fuit autem elementorum extensio per providentiam opus creatoris patrisque. et terra occupavit medium ... **Plutarch** *Quaest. Conv.* 719c, 720c (God geometrizing), *De facie* 926e–927e. **Ps.Plutarch** *Str.* 12 (= Eus. *PE* 1.8.12), Διογένης ὁ Ἀπολλωνιάτης ἀέρα ὑφίσταται στοιχεῖον ... κοσμοποιεῖ δὲ οὕτως· ὅτι τοῦ παντός κινουμένου καὶ ἥ μὲν ἀραιοῦ, ἥ δὲ πυκνοῦ γινομένου ... **Ps.Galen** *Hist. Phil.* 17 Diels. **Nicomachus** *Intro. arith.* 2.18.4, τῇ δὲ ἄρα διχοστατεῖ καὶ διανενέμηται καὶ ἐναντία ἀλλήλοις φαίνεται τὰ τε τοῦ ἀριθμοῦ πάντα καὶ τὰ ἐν κόσμῳ πρὸς ταῦτα ἀποτελεσθέντα καὶ καλῶς οἱ παλαιοὶ φυσιολογεῖν ἀρχόμενοι τὴν πρώτην διαίρεσιν τῆς κοσμοποιίας ταύτη ποιοῦνται· Πλάτων μὲν τῆς ταυτοῦ φύσεως καὶ τῆς θατέρου ὀνομάζων καὶ πάλιν τῆς ἀμερίστου καὶ αἰε κατὰ τὰ αὐτὰ ἐχούσης οὐσίας τῆς τε αὐτῇ μεριστῆς γινομένης, Φιλόλαος δὲ ἀναγκαῖον τὰ ἑόντα πάντα εἶμεν ἥτοι ἅπειρα ἢ περαίνοντα ἢ περαίνοντα ἅμα καὶ ἅπειρα, ὅπερ μᾶλλον συγκατατίθεται εἶναι, ἐκ περαίνόντων ἅμα καὶ ἀπείρων συνεστάναι τὸν κόσμον, κατ' εἰκόνα δηλονότι τοῦ ἀριθμοῦ ... **Poimandres** (= *Corp. Herm.* 1) 8, τὰ οὖν, ἐγὼ φημι, στοιχεῖα τῆς φύσεως πόθεν ὑπέστη;—πάλιν ἐκείνος πρὸς ταῦτα, ἐκ βουλῆς θεοῦ, ἥτις λαβοῦσα τὸν Λόγον καὶ ἰδοῦσα τὸν καλὸν κόσμον ἐμμήσατο, κοσμοποιηθεῖσα διὰ τῶν ἑαυτῆς στοιχείων καὶ γεννημάτων ψυχῶν. **Iamblichus** in *Nicomachi arithm. intro.* 10.21–25 Pistelli (doxography on number), οἱ δὲ περὶ Ἰππασσον ἀκουσματικοὶ ἀριθμὸν εἶπον παραδείγμα πρῶτον κοσμοποιίας, καὶ πάλιν κριτικὸν κοσμουργοῦ θεοῦ ὄργανον. Φιλόλαος δὲ φησιν ἀριθμὸν εἶναι τῆς τῶν κοσμικῶν αἰωνίας διαμονῆς τὴν κρατιστεύουσαν καὶ αὐτογενῇ συνοχήν ... **Simplicius** in *Cael.* 589.25–91.7 (on *Cael.* 301a12); in *Ph.* 453.10–17, οὐ γὰρ δὴ καὶ ἐκείνον, ὃν ὑμνοῦντες λέγουσι (sc. οἱ Πυθαγόρειοι) “κέκλυθι κύδμι' ἀριθμέ, πάτερ μακάρων, πάτερ ἀνδρῶν”, οὐδὲ

ὥνπερ Ἰππασος ἀφωρίσατο παράδειγμα πρῶτον ὑπάρχειν τῆς κοσμοποιίας ...; 1120.21 (on *Ph.* 250b15) οὕτω γὰρ καὶ Δημόκριτος κοσμοποιεῖ καὶ Ἐμπεδοκλῆς καὶ Ἀναξαγόρας, οἱ μὲν συγκρίνεσθαι καὶ διακρίνεσθαι τὰ ἄτομα σώματα καὶ τὰ τέτταρα στοιχεῖα λέγοντες, Ἀναξαγόρας δὲ ἐκκρίνεσθαι τὰς ὁμοιομερείας ἀπὸ τοῦ μίγματος λέγων· καὶ ἡ σύγκρισις δὲ καὶ ἡ διάκρισις καὶ ἡ ἔκκρισις κινήσεις τινές εἰσι. καὶ περὶ γενέσεως δὲ καὶ φθορᾶς διαλέγονται πάντες ...; 1360.5–11, καὶ οἱ πλείστοι τῶν σοφῶν εἰς τὸ εὐμαθὲς τῶν ἀκουόντων ἀποβλέψαντες οὕτως κοσμοποιοῦσι, πρῶτα καὶ δεύτερα καὶ τρίτα παραγενέσθαι λέγοντες ... ὁ δὲ Ἀριστοτέλης αἰσθόμενος ὥς ἔοικεν ἤδη παρανοούντων αἰεὶ τὰ λεγόμενα, καὶ χρονικὴν ἀρχὴν συνεπινοούντων, οὕτε κοσμοποιεῖν ἠνέσχετο καὶ γενητὸν ἐπὶ τῶν αἰδίων προφανῶς λέγειν παρητήσατο ...

## Aëtius *Placita* 2.7

### Περὶ τάξεως τοῦ κόσμου

#### WITNESSES

Ps.Plutarch 2.7, Eusebius 15.38, ps.Galen 50, Qusṭā Ibn Lūqā 2.7  
Stobaeus 1.22.1abde, 15.6d  
Cf. Achilles 4

#### ANALYSIS

1. Having discussed the genesis of the cosmos as we know it, the doxographer now moves on to the result of that process, its current ordered disposition. As we shall discuss below, the chapter's subject is parallel to the later chapters on the ordering of the heavenly bodies (2.15) and the placement of the earth (3.11), i.e. it falls under the Aristotelian category of disposition (κείσθαι).<sup>178</sup>

2. P preserves six relatively brief lemmata as follows:

ζ'. Περὶ τάξεως κόσμου

- P2.7.1 Παρμενίδης στεφάνας εἶναι περιπελεγμένας ἐπαλλήλους, τὴν μὲν ἐκ τοῦ ἀραιοῦ τὴν δ' ἐκ τοῦ πυκνοῦ, μικτὰς δ' ἄλλας ἐκ φωτός καὶ σκότους μεταξὺ τούτων· καὶ τὸ περιέχον δὲ πάσας τεύχους δίκην στερεὸν ὑπάρχειν.
- P2.7.2 Λεύκιππος καὶ Δημόκριτος χιτῶνα κύκλῳ καὶ ὑμένα περιτείνουσι τῷ κόσμῳ.
- P2.7.3 Ἐπίκουρος ἐνίων μὲν κόσμων ἀραιὸν τὸ πέρας ἐνίων δὲ πυκνόν, καὶ τούτων τὰ μὲν τινα κινούμενα τὰ δ' ἀκίνητα.
- P2.7.4 Πλάτων πῦρ πρῶτον εἶτ' αἰθέρα μεθ' ὃν ἀέρα ἐφ' ᾧ ὕδωρ, τελευταίαν δὲ γῆν· ἐνίοτε δὲ τὸν αἰθέρα τῷ πυρὶ συνάπτει.
- P2.7.5 Ἀριστοτέλης πρῶτον μὲν αἰθέρα ἀπαθῆ, πέμπτον δὲ τι σῶμα· μεθ' ὃν παθητὰ πῦρ ἀέρα ὕδωρ· τελευταίαν δὲ γῆν. τούτων δὲ τοῖς μὲν οὐρανίοις ἀποδεδόσθαι τὴν κυκλικὴν κίνησιν, τῶν δ' ὑπ' ἐκεῖνα τεταγμένων τοῖς μὲν κούφοις τὴν ἄνω τοῖς δὲ βαρέσι τὴν κάτω.
- P2.7.6 Ἐμπεδοκλῆς μὴ διὰ παντὸς ἐστῶτας εἶναι μηδ' ὀρισμένους τοὺς τόπους τῶν στοιχείων, ἀλλὰ πάντα τοὺς ἀλλήλων μεταλαμβάνειν.

<sup>178</sup> See our remarks in ch. 15 sect. 1. In both chapters relative positions of elements and/or heavenly bodies play a role, so one could think of the category of relation (πρός τι) as well. But the category of disposition is primary. See further Part I sect. 9 text preceding n. 244.

By P's standards this is a reasonably long chapter, about the same length as the previous one which also has six doxai. The mss. are divided between τοῦ κόσμου and κόσμον in the title. Given that all other witnesses support the former reading, it should be retained, even though the article is missing in the titles of ¶1 and ¶2. E and Q copy out the chapter verbatim with no really substantive variants. There is some confusion between ether (αἰθέρα) and air (ἀέρα) in the Aristotelian doxa and the text in the final lemma has given rise to quite a bit of conjecture.

Even if it is of almost no value for the reconstruction of A, G's text is nevertheless interesting for what it reveals about the way epitomizing doxographers work:

§50 Περί τάξεως τοῦ κόσμου

- G50.1 Παρμενίδης στεφάνους εἶναι περιπεπλεγμένας πρὸς ἀλλήλους, τὸν μὲν ἐκ τοῦ ἀραιοῦ, τὸν δὲ ἐκ τοῦ πυκνοῦ· καὶ τὸ περιέχον δὲ τὸ πᾶν στοιχεῖον δίκεν στερεοῦ εἶναι, πρῶτον πῦρ, εἴτα αἰθέρα, μεθ' ὃν ἀέρα μεθ' ὃν ὕδωρ.
- G50.2 Ἐμπεδοκλῆς δὲ μὴ διὰ παντὸς ἐστῶτας μὴδ' ὠρισμένους τόπους τῶν στοιχείων ὑπέλιπεν, ἀλλὰ πάντα τῶν ἄλλων μεταλαμβάνειν.

In effect he reduces and standardizes the Parmenidean cosmology, combining it with the Platonic, so that the rings represent a conventional sequence of elements (earth is omitted because it has no place in the heavens). Thus the various cosmologies are reduced to one 'lowest common denominator'. But in a second and final lemma the Empedoclean view is retained, because it offers a radically different alternative. For all his clumsiness G still follows the method of the *Placita*!

3. Five of P's six lemmata are also located in S, who has one additional lemma not found in P. The lemmata are spread over two chapters.

- 1.15 title Περί σχημάτων  
1.15.6d  
S1 Ἐμπεδοκλῆς ἔλεγε μὴ διὰ παντὸς ἐστῶτας εἶναι μὴδ' ὠρισμένους τοὺς τόπους τῶν στοιχείων, ἀλλὰ πάντας τοὺς ἀλλήλων μεταλαμβάνειν.
- 1.22 title Περί τάξεως τοῦ κόσμου  
1.22.1a  
S2 Παρμενίδης στεφάνας εἶναι περιπεπλεγμένας ἐπαλλήλους, τὴν μὲν ἐκ τοῦ ἀραιοῦ, τὴν δὲ ἐκ τοῦ πυκνοῦ· μικτὰς δὲ ἄλλας (ἐκ) φωτὸς καὶ σκοτὸς μεταξὺ τούτων· καὶ τὸ περιέχον δὲ πάσας τεύχους δίκην στερεὸν ὑπάρχειν, ὅφ' ὃ πυρώδης στεφάνη· καὶ τὸ μεσαίτατον πασῶν περὶ ὃ πάλιν πυρώδης· τῶν δὲ συμμιγῶν τὴν μεσαιάτην

ἀπάσαις αἰτίαν πάσης κινήσεως καὶ γενέσεως ὑπάρχειν, ἦντινα καὶ δαίμονα κυβερνήτην καὶ κληδοῦχον ἐπονομάζει, δίκην τε καὶ ἀνάγκην. καὶ τῆς μὲν γῆς ἀπόκρισιν εἶναι τὸν ἄερα, διὰ τὴν βιαιοτέραν αὐτῆς ἑξατμισθέντα πύλῃσιν, τοῦ δὲ πυρὸς ἀναπνοὴν τὸν ἥλιον καὶ τὸν γαλαξίαν κύκλον· συμμιγῇ δ' ἐξ ἀμφοῖν εἶναι τὴν σελήνην, τοῦ τ' ἄερος καὶ τοῦ πυρὸς. περιστάντος δ' ἀνωτάτω πάντων τοῦ αἰθέρος ὑπ' αὐτῷ τὸ πυρῶδες ὑποταγῆναι τοῦθ' ὅπερ κεκλήκαμεν οὐρανόν, ὑφ' ᾧ ἤδη τὰ περιίγεια.

1.22.1b

S3

Ἀριστοτέλης πρῶτον αἰθέρα ἀπαθῆ, πέμπτον τι σῶμα, μεθ' ὃν παθητὰ πῦρ, ἄερα, ὕδωρ, τελευταίαν δὲ γῆν.

1.22.1c

Arius Didymus fr. 9 Diels

1.22.1d

S4

Φιλόλαος πῦρ ἐν μέσῳ περὶ τὸ κέντρον, ὅπερ ἐστίαν τοῦ παντός καλεῖ καὶ Διὸς οἶκον καὶ μητέρα θεῶν, βωμόν τε καὶ συνοχήν καὶ μέτρον φύσεως· καὶ πάλιν πῦρ ἕτερον ἀνωτάτω, τὸ περιέχον. πρῶτον δ' εἶναι φύσει τὸ μέσον, περὶ δὲ τοῦτο δέκα σώματα θεῖα χορεύειν, οὐρανόν, τοὺς (ἑ) πλανήτας, μεθ' οὓς ἥλιον, ὑφ' ᾧ σελήνην, ὑφ' ἧ τὴν γῆν, ὑφ' ἧ τὴν ἀντίχθονα, μεθ' ἧ σύμπαντα τὸ πῦρ, ἐστίαις περὶ τὰ κέντρα τάξιν ἐπέχον. τὸ μὲν οὖν ἀνωτάτω μέρος τοῦ περιέχοντος, ἐν ᾧ τὴν εἰλικρίνειαν εἶναι τῶν στοιχείων, Ὀλύμπον καλεῖ· τὰ δὲ ὑπὸ τὴν τοῦ Ὀλύμπου φοράν, ἐν ᾧ τοὺς πέντε πλανήτας μεθ' ἡλίου καὶ σελήνης τετάχθαι, κόσμον. τὸ δ' ὑπὸ τούτοις ὑποσέληνόν τε καὶ περιίγειον μέρος, ἐν ᾧ τὰ τῆς φιλομεταβόλου γενέσεως, οὐρανόν. καὶ περὶ μὲν τὰ τεταγμένα τῶν μετεώρων γίνεσθαι τὴν σοφίαν, περὶ δὲ τῶν γινομένων τὴν ἀταξίαν τὴν ἄρετήν, τελείαν μὲν ἐκείνην, ἀτελεῖ δὲ ταύτην.

1.22.1e

S5

Λεύκιππος καὶ Δημόκριτος χιτῶνα κύκλῳ καὶ ὑμένα περιτείνουσι τῷ κόσμῳ, διὰ τῶν ἀγκιστροειδῶν ἀτόμων συμπεπλεγμένον.

S6

Ἐπίκουρος ἐνίων μὲν κόσμων ἀραιὸν τὸ πέρας, ἐνίων δὲ πυκνόν, καὶ τούτων τὰ μὲν τινα κινούμενα, τὰ δ' ἀκίνητα.

1.22.1f

lemma from A 2.6\*, followed by a quote from *Ti.* 32c5–33a2.

Only the final lemma of A's chapter is found in S 1.15. This chapter, which takes its title from P 1.14, contains various clusters of doxai taken from ¶2, ¶7, ¶8 and ¶10, as well as some other material from Plato and elsewhere. It is surprising that S includes the lemma as part of a cluster of Empedoclean material here, but his method can be reconstructed. As we noted at Vol. I:219, the quotation of P 2.8.1 caused him to jump backwards in the text and quote the final lemma in the previous chapter. Presumably he must have marked his text, because when he cites the remainder of the chapter in 1.22, he is careful to leave this lemma out.

The remaining lemmata are located in S's ch. 22, which obtains its title from A 2.7.<sup>179</sup> It will be necessary to disentangle his procedure.

- (a) He begins with the Parmenidean doxa, S<sub>2</sub>, which is much longer than the one in the form preserved by P. It emerges that P has retained only the first four lines of the report. This is consonant with his method, which is not to summarize but to excise; see Vol. I:188. When viewed in its entirety, the full complexity of the report emerges. All the various parts and elements of the cosmos are somehow covered, as well as aspects which must have seemed bizarre and scarcely comprehensible to A's readers. The details of this text will concern us further below (e.g. that the cosmic ring is also called a δαίμων). Clearly the description is meant to be a cosmology rather than a cosmogony, but there are some similarities to the Empedoclean cosmogony in the previous chapter (note ἀπόκρυσιν, πύλησιν).
- (b) The Parmenidean doxa ends with a mention of ether and fire. This reminds S, it seems, of Peripatetic cosmology. So the next doxa, S<sub>3</sub>, reports Aristotle's views. But he copies out only the first half of the doxa in P, replacing the second with an extract from AD (as Diels rightly saw) which covers the same ground but includes extra theological material. The Platonic lemma which precedes in P is passed over by S, who prefers the lemma on the sequence of genesis from A 2.6.4\* added later at 1.22.1f.
- (c) S follows with S<sub>4</sub>, a long account of Philolaic cosmology missing in P.<sup>180</sup> But there seems no reason not to place it in this chapter. Its placement represents another fine example of the suture that S loves. This doxa begins precisely where the extract of AD on Aristotle leaves off, i.e. at the notion of τὸ μέσον. The length of this doxa is about the same as that of Parmenides. They share certain linguistic features, especially in the first half of the Philolaic doxa, and would appear to have the same provenance. The special features of Philolaus' cosmology, the central fire and counter-earth, are naturally prominent, but the remainder is consistent with Platonic-Aristotelian universe. Burkert, followed by Huffman, argues that only the first part (and not all of it), which agrees with Aristotle's early reports on Pythagoreanism, contains authentic material.<sup>181</sup> The epistemological turn at the end is surprising.

<sup>179</sup> On Wachsmuth's erroneous addition of the words (ἐἰ ἐν τὸ πᾶν) to the title, see ch. 1 sect. 3 and n. 28. This will have been the source for Photius and the Index Laurentianus, who place it among their titles. See further Vol. I:213–217.

<sup>180</sup> P has less interest in the old Pythagorean material than S. He deletes Philolaic doxa in his 1.3, 2.4, 2.7, 2.30. S never deletes such doxai when they occur in P (but for 3.11, 3.13 he is not extant).

<sup>181</sup> See Burkert (1972) 244–246, Huffman (1993) 237–238, 395–400 (with translations to which we are indebted).

- (d) S then follows with the two atomist lemmata, S<sub>5</sub>–6. For the doxa of Leucippus–Democritus he adds a short phrase not retained by P. Then follows the Platonic material mentioned above.

We see, therefore, that S's method, involving the usual processes of association, replacement and cluster-forming, is clear enough. His deviations from P's order can be easily explained. There is nothing to suggest that the order was originally different to that given by the epitomator. The chief problem is where to place the Philolaic doxa.

4. There is no trace of this chapter in T, presumably because its subject is insufficiently controversial. The evidence in Achilles, however, is once again tantalizing.<sup>182</sup> In §4 Περί τῆς συστάσεως τῶν ὅλων—a title, we note, that could be used both for cosmogony and cosmology—the Empedoclean doxa is preserved in a slightly fuller form:

*Isagoge* 4, 34.20–23 Maass ~ 13.12–14 Di Maria

ὁ δὲ Ἐμπεδοκλῆς οὐ δίδωσι τοῖς στοιχείοις ὁρισμένους τόπους, ἀλλ' ἀντιπαρᾶχωρεῖν ἀλλήλοις φησὶν, ὥστε καὶ τὴν γῆν μετέωρον φέρεσθαι καὶ τὸ πῦρ ταπεινότερον.

As in P, it occupies the final position of a long chapter. Functionally it has the same role, offering a view that differs in the elements' not being fixed. The remainder of the chapter shows a number of similarities to A. The elements are discussed, as is their location in the cosmos. The five-element cosmic structure is attributed to Aristotle at 33.29 Maass ~ 12.16 Di Maria, just as it is in A (P<sub>5</sub>, S<sub>3</sub>). But the name-labels Chrysippus and Archimedes are later than those in A (the latter is never found in the *Placita*). The section on the Orphics, in which the τάξις of the cosmic sphere is compared with an egg, might just conceivably have been derived from the same source that A drew on; cf. above 2.2\* and our comments in sect. 4. Unfortunately none of this gives us much help in understanding A's chapter.<sup>183</sup>

5. This chapter differs from the earlier chapters in the book. The theme of the order of the cosmos might seem to invite general descriptions which could easily stand alone. Two of its doxai are much longer than

<sup>182</sup> See also our observations in Part I sect. 10.

<sup>183</sup> The fact that the image used by the Orphics involves a membrane, just as we find in P 2.7.2, is no more than a coincidence.



anything we have come across so far.<sup>184</sup> The text is difficult and has given rise to much scholarly discussion.<sup>185</sup> One of our main theses in this study has been that the *raison d'être* of doxography is to focus on points of difference. But what can these be in the present context? There are seven lemmata preserved in total. S's treatment gives us no reason to doubt that P has preserved the original order for the six he retains. This does leave us with the task of determining where the extra Philolaic doxa is to be placed. The challenge therefore is to try to determine the rationale of the doxographer in putting together this chapter. It will not be an easy task.

First there is the title *Περὶ τάξεως τοῦ κόσμου*. In contrast to the previous chapter, the theme is not cosmogony but cosmology, i.e. the ordered structure of the cosmos. The title is parallel to that of chapter 15, *Περὶ τάξεως ἀστέρων*, where as we shall see A gives differing views on the ordering of the heavenly bodies. But we should also note A's chapter at P 3.11, *Περὶ θέσεως γῆς*, which gives views on the placement of the earth in the cosmos and includes a Philolaic doxa with similarities to the doxa in the present chapter. On the basis of these parallel chapters we suggest that *τάξις* in the present chapter means 'ordering' in the sense of 'disposition' or 'arrangement'. The various component parts of the cosmos, whether elements or regions or bodies, can be regarded as being arranged in differing ways. Let us now look at the various lemmata one by one.

(1) P<sub>1</sub> = S<sub>2</sub>. The long Parmenidean doxa at the head of the chapter is a valuable but difficult text. Partly based on fr. 12 DK, it has been the subject of much controversy.<sup>186</sup> Most of these discussions can be set aside for our present purposes. Our task is to try to understand what motivated A to present the doxa in the manner that he did. The doxa can clearly be divided into two halves. The first half concentrates on the bands made up and mixed from various components, the solid extremities at both ends (i.e. the edge of the cosmos and the core of the earth), the fiery region next to both extremities and the divine band

<sup>184</sup> Though not longer than some chapters that occur elsewhere in A. Cf. for example the early chapters 1.3–7 and the long chapters on meteorology at 3.1–5, the chapters on the senses and psychological questions at 4.9–22 etc.

<sup>185</sup> See further the notes below.

<sup>186</sup> See Guthrie (1962–1981) 2.61–64, Mansfeld (1964) 271–272, Tarán (1965) 232–250, Finkelberg (1986). Note also the related doxa at Cicero *N.D.* 1.28 with a primarily theological emphasis (part of the famous doxography on the divine; the remains in the parallel text of Philodemus are negligible, cf. Schober (1988) 113).

in the middle which is the source of all motion. All of this is rather exotic Presocratic cosmology, bearing little resemblance to the Platonic-Aristotelian worldview which was to become the standard model in the ancient world. The second half of the doxa reads much more conventionally with its reference to the elements of earth, air, fire and ether, to the heavenly bodies of the sun, the moon and the Milky Way, and to the heavenly and earthly regions. The role of causation is not very clear. On the one hand the goddess is the cause of movement and becoming, on the other hand mechanistic processes of condensation and exhalation produce the elemental regions.

(2) P<sub>2</sub> = S<sub>5</sub>. The next two lemmata are much briefer and can be seen as appendages to the long description. But in the manner of the *Placita* they do emphasize a point of contrast, focusing on Parmenides' view of the solidity of the extreme limit of the cosmos. The atomists differ by postulating a thin membrane around the cosmos, the same ὑμῆν which plays a prominent role in the cosmogony of Leucippus recorded at D.L. 9.31–32.<sup>187</sup> A adds that the membrane is 'woven together' (συν-πεπλεγμένον) of atoms, as compared to the Parmenidean bands which are 'wound around each other' (περιπελεγμένας ἐπαλλήλους).

(3) P<sub>3</sub> = S<sub>6</sub>. The doxa of Epicurus also focuses on the limit of the cosmos. By introducing the notion of multiple *kosmoi* (cf. A 2.1\*), it puts forward a compromise view in which the two possibilities of a rare and a dense outer limit are put forward. The additional distinction of some *kosmoi* being in movement and others motionless introduces a different subject, which recalls A 2.2a. Through a stroke of fortune we appear to have the actual source of A's information in a text of Epicurus' *Letter to Pythocles*, D.L. 10.88:<sup>188</sup>

A 2.7.3\*: Ἐπίκουρος ἐνίων  
μὲν κόσμων ἀραιὸν τὸ  
πέρας ἐνίων δὲ πυκνόν,  
καὶ τούτων τὰ μὲν τινα  
κινούμενα τὰ δ' ἀκίνητα.

D.L. 10.88: κόσμος ἐστὶ περιοχὴ τις οὐρανοῦ,  
ἄστρα τε καὶ γῆν καὶ πάντα τὰ φαινόμενα  
περιέχουσα, ἀποτομὴν ἔχουσα ἀπὸ τοῦ  
ἀπείρου, καὶ καταλήγουσα ἐν πέρατι ἢ ἀραιῷ  
ἢ πυκνῷ ... ἢ περιεγεμένῳ ἢ στάσιν ἔχοντι ...

The doxographer simplifies the original text by setting aside its epistemological emphasis (multiple possibilities because of the lack of sensory evidence) and converts it into a simple double diaeresis. The mention

<sup>187</sup> But is not mentioned by A in the long passage on atomist cosmogony at P 1.4.

<sup>188</sup> Text Marcovich, leaving out some words which may be a gloss. The source may also have been the 'mother work', of which the letter is a summary, i.e. the *On nature* in 37 books.

of multiple *kosmoi* is somewhat awkward in the context of this chapter (note that the title speaks of ‘the arrangement of *the* cosmos’),<sup>189</sup> but can be explained by taking into account the diaeretic structure that the *Placita* so often use.

(4) P<sub>4</sub> (not in S). The Platonic doxa approximates a more conventional rendering of the dominant cosmological model, with five elements (or regions) being listed from the outer periphery of the cosmos to its centre. Fire is placed before ether, prefiguring the contrast with Aristotle. The additional comment is made in order to reduce the five elements back to four, as in the previous chapter (A 2.6.4\*). The question of whether Plato espoused a four- or a five-element universe was one of the very few issues in dispute in Platonist cosmology.<sup>190</sup> It is possible that A’s original doxa was longer, because we do not have confirming evidence in S, but in its present form there is no indication that this was the case.

(5) P<sub>5</sub> = S<sub>3</sub>. The Aristotelian doxa is clearly formulated in order to form a contrast with the preceding Platonic view. The places of fire and ether are reversed. Various ordering phrases are common to the two doxai (πρῶτον, μεθ’ ὃν, τελευταίαν). But the doxographer also adds quite a bit of information not directly relevant to the contrast, including a distinction between impassible and passible elements and information on their movement. Certain details are reminiscent of A at P 1.14 Περί σωμάτων, but the treatment of Aristotle there differs. The ether is identified as ‘a fifth body’; at A 2.6.2 the ‘fifth element’ had been mentioned but as part of a Pythagorean doxa.

(6) S<sub>4</sub> (not in P). Diels placed the Philolaic doxa last. Perhaps he thought that the semantic discussion that it contains determined its place, on an analogy with 2.1\*. But in all probability this is wrong. As we shall see, the doxa of Empedocles should be placed last because it forms an effective contrast with all the others that precede it. But where should Philolaus be placed? The doxa is very long, about the same length as the first one giving Parmenides’ views. It too has been the subject of much discussion,<sup>191</sup> and can best be divided into two sections. The first gives the distinctive cosmic order reported by Aristo-

<sup>189</sup> Perhaps this is the reason why most mss. of P omit τοῦ in the title.

<sup>190</sup> Dillon (1996) 49. In the *Timaeus aithēr* in fact is regarded as a form of air; cf. 58d. This was not taken over by the later tradition and would not have suited the doxographer when making the contrast with Aristotle.

<sup>191</sup> See esp. Burkert (1972) 243–246, Huffman (1993) 395–400. Both regard the part from τὸ μὲν οὖν ἀνωτάτω μέρος τοῦ περιέχοντος onwards as inauthentic, i.e. based on

tle in *De Caelo* 2.13 (as noted above, the same doxa reappears in A at P 3.11.2 on the position of the earth). The second divides the cosmos in basically Platonist fashion into three regions,<sup>192</sup> which are given distinctive names<sup>193</sup> and then related to two cognitive states.<sup>194</sup> The cosmology of the first section, apart from the idiosyncratic doctrines of the central fire and the counter-earth, seems reasonably similar to the Platonic and Aristotelian view. The doxa could thus come in between Epicurus and Plato, as a kind of transitional doxa. Or it could come after Plato and Aristotle, as an alternative which is somewhat unusual in some of its details. It will not have been placed in between them on account of the deliberate opposition between Plato and Aristotle. The start of the doxa, πῦρ ἐν μέσῳ περὶ τὸ κέντρον, does seem to be in contrast to the Platonic view, which begins with πῦρ πρῶτον. Fire thus has a double position, at the very centre of the cosmos and at the periphery, unlike in Plato (and Aristotle), where the earth is at the centre. It thus seems preferable to put the doxa after the other two views. (A further consideration is that all the previous five doxai start at the outer edge of the cosmos, but Philolaus starts with fire at the centre. We recall the diaeresis between outer edge and centre at the beginning of A 2.6.) There is perhaps also an additional parallel with the Parmenidean doxa, which also has a symmetry between the two limits of the cosmos. Philolaus has the fire at the two limits, Parmenides the solid substances and the fiery bands just inside them. Both doxai also discuss the naming of regions of the cosmos.

(7) S1 = P6. The Empedoclean doxa remains. It differs from all the others because the elements do not retain a fixed place. As we have already seen, A likes to use the final position in the sequence of doxai for a view that is radically different. Compare ¶2 and ¶4 which end with ‘modal’ views attributed to Epicurus. The view here is certainly an oddity. After all, the doxa in the previous chapter, A 2.6.3\*, could easily yield a cosmology. The Empedoclean picture of the universe was

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a tradition that does not go back to Philolaus’ writings. See now further discussion in Huffman (2007), esp. 75.

<sup>192</sup> I.e. the realms of the fixed stars, the planets and the sub-lunary world. The phrase φιλομετάβολος γένεσις is as a sentiment very Platonic, but the formulation is quite unusual. The adjective is found elsewhere only at S.E. *Adv. math.* 1.82 in a grammatical context.

<sup>193</sup> For this reason we have capitalized Kosmos and Ouranos, in addition to Olympus, in our text and translation.

<sup>194</sup> The use of ἀρετή for imperfect knowledge is quite unusual.

not more fluid than that of the Atomists or of the Stoa with their biological cycle (note the association of Empedoclean and Stoic cosmology from a Platonic-Aristotelian perspective at Plutarch, *De facie* 926D–E). Indeed, as O’Brien has noted, the origin of A’s (and Ach’s) doxa is more likely Aristotle’s criticisms of the movements of the elements in Empedocles’ theory.<sup>195</sup> The doxographer—not unlike his ultimate source—mixes cosmology and cosmogony. But the motivation is clear enough, the wish to explore the various possibilities of the subject in question. We recall that the very similar Empedoclean doxa in Ach also occupies the final position in the chapter. In other words, this must have been a technique that was well-established in the tradition of the *Placita*.

6. We are now in a position to try to determine the purpose and structure of the chapter. The contrast between the first six doxai and the last is clear. Six views with varying amounts of detail involving fixed elements stand in contrast to a view where the location of the elements is fluid. It is much more difficult to understand how the first six views relate to each other. Do they just form a loosely organized list? Certainly they appear to divide into two groups of three, each with their own contrasts, as noted above in our analysis. It is not too fanciful, we submit, to see in these two groups an echo of the fundamental division between mechanistic–atomistic and rational–teleological views of the cosmos-*kosmoi* that is central to early Greek cosmology. But it has to be said that the opposition is not made very explicit. It is clear that the method of the diaeresis has limitations when used for a descriptive subject such as we find in this chapter. In the chapter Περὶ τάξεως ἀστέρων (= P 2.15), where the ordering of the stars is discussed, it proves easier to set up diaeretic distinctions. The doxographer is rather loose and unsystematic in the information that he does and does not provide in this chapter, e.g. in his treatment of the role of movement in the doxai of Epicurus and Aristotle, the epistemological material in the Philolaic doxa, and so on.<sup>196</sup> As also occurs elsewhere, doxography lapses into description, to the delight but also frustration of modern scholars, who have to deal with these texts in the absence of the original material.

<sup>195</sup> O’Brien (1969) 148, referring to *Ph.* 196a19–23, *De gen. et corr.* 333b22–334a9.

<sup>196</sup> It is striking that the radically different theory of Aristarchus is *not* included, unlike at 2.24.7\*.

7. For this chapter we have not been able to find doxographical-dialectical parallels of any value outside the doxographical tradition itself. In *De Caelo* 2.2–3 Aristotle discusses various aspects of the cosmos as a whole, including the positioning of its parts and the necessity both of the unchanging heaven and of the coming-to-be of the other elements, but the only doxography is a discussion with the Pythagoreans on directions in the sphere, and there is no resemblance to the material in A. As noted above, the distinctive Pythagorean order of the central fire and the counter-earth is mentioned in 2.13 in connection with the earth. There are various descriptions of the ordering of the cosmos that can be adduced. A clear example is found in *De Mundo* 2–3 (text below). A further intriguing parallel<sup>197</sup> is the seven-fold ordering of the cosmos in the ps.Hippocratic treatise *De hebdomadis*, but the method of the seven-fold list and the terminology used differ quite markedly from A.<sup>198</sup> One might also compare a Philonic text *Congr.* 103–104, in which (for the sake of the allegory) the cosmos has nine parts (with God as the tenth). All these texts give a  $\tau\acute{\alpha}\xi\iota\varsigma$  of the cosmos proceeding from the highest to the lowest part. But there are no doxographical comparisons.

#### STRUCTURE (see above sect. 6)

##### A fixed cosmologies

##### 1 non-standard mechanistic cosmologies

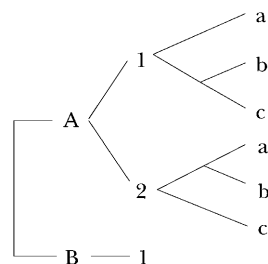
- a Parmenides: solid extremities and various internal bands (= §1)
- b Leucippus-Democritus: tenuous membrane as extremity (= §2)
- c Epicurus: multiple *kosmoi* with rare and dense extremities (= §3)

##### 2 standard rational-teleological cosmologies

- a Plato: fire first at the extremity (= §4)
- b Aristotle: ether first at the extremity (= §5)
- c Philolaus: fire at the centre (= §6)

##### B fluid cosmology

##### 1 Empedocles: elements not fixed (= §7)



<sup>197</sup> As already noted by Mansfeld (1971) 136 n. 32.

<sup>198</sup> Note esp. the use of the words  $\tau\acute{\alpha}\xi\iota\varsigma$  and  $\zeta\acute{o}\sigma\mu\omicron\iota$  (plural). The Greek text is imperfectly transmitted. We have printed below a readable text based on Roscher's edition.

## RECONSTRUCTED TEXT

ζ'. Περὶ τάξεως τοῦ κόσμου<sup>1</sup>

- 1 Παρμενίδης στεφάνας εἶναι περιπεπλεγμένας ἐπαλλήλους, τὴν μὲν ἐκ τοῦ ἀραιοῦ τὴν δ' ἐκ τοῦ πυκνοῦ, μικτάς δ' ἄλλας ἐκ<sup>2</sup> φωτὸς καὶ σκότους μεταξὺ τούτων· καὶ τὸ περιέχον δὲ πάσας τείχους δίκην στερεὸν ὑπάρχειν, ὅφ' ὃ πυρώδης στεφάνη· καὶ τὸ μεσαιτάτον πασῶν περὶ ὃ πάλιν πυρώδης· τῶν δε συμμιγῶν τὴν μεσαιτάτην ἀπάσαις <ἀρχήν> τε καὶ <αἰτίαν><sup>3</sup> πάσης κινήσεως καὶ γενέσεως ὑπάρχειν, ἥντινα καὶ δαίμονα κυβερνήτην καὶ κληροῦχον<sup>4</sup> ἐπονομάζει, δίκην τε καὶ ἀνάγκην. καὶ τῆς μὲν γῆς ἀπόκρισιν εἶναι τὸν ἄέρα, διὰ τὴν βιαιότεραν αὐτῆς ἑξατμισθέντα πύλῃσιν, τοῦ δὲ πυρὸς ἀναπνοὴν τὸν ἥλιον καὶ τὸν γαλαξίαν κύκλον· συμμιγῇ δ' ἐξ ἀμφοῖν εἶναι τὴν σελήνην, τοῦ τ' ἁέρος καὶ τοῦ πυρὸς. περιστάντος δ' ἀνωτάτω πάντων τοῦ αἰθέρος ὑπ' αὐτῷ τὸ πυρῶδες ὑποταγῆναι τοῦθ' ὅπερ κεκλήκαμεν οὐρανόν, ὅφ' ὃ<sup>5</sup> ἦδη τὰ περιέγει.
- 2 Λεύκιππος καὶ Δημόκριτος χιτῶνα κύκλῳ καὶ ὑμένα περιτείνουσι τῷ κόσμῳ, διὰ τῶν ἀγκιστροειδῶν ἀτόμων συμπεπλεγμένον<sup>6</sup>.
- 3 Ἐπίκουρος ἐνίων μὲν κόσμων ἀραιὸν τὸ πέρας ἐνίων δὲ πυκνόν<sup>7</sup>, καὶ τούτων τὰ μὲν τινα κινούμενα τὰ δ' ἀκίνητα.
- 4 Πλάτων πῦρ πρῶτον εἶτ' αἰθέρα μεθ' ὃν ἄερα ἐφ' ὃ ὕδωρ, τελευταίαν δὲ γῆν· ἐνίοτε δὲ τὸν αἰθέρα τῷ πυρὶ συνάπτει<sup>8</sup>.
- 5 Ἀριστοτέλης πρῶτον μὲν<sup>9</sup> αἰθέρα<sup>10</sup> ἀπαθῆ, πέμπτον δὲ τι<sup>11</sup> σῶμα· μεθ' ὃν παθητὰ πῦρ ἄερα ὕδωρ<sup>12</sup>· τελευταίαν δὲ γῆν. τούτων δὲ τοῖς μὲν οὐρανίοις ἀποδεδόσθαι<sup>13</sup> τὴν κυκλικὴν κίνησιν, τῶν δ' ὑπ' ἐκεῖνα<sup>14</sup> τεταγμένων τοῖς μὲν κούφοις τὴν ἄνω τοῖς δὲ βαρέσι τὴν κάτω.
- 6 Φιλόλαος πῦρ ἐν μέσῳ περὶ τὸ κέντρον, ὅπερ ἐστὶν τοῦ παντὸς καλεῖ καὶ Διὸς οἶκον καὶ μητέρα θεῶν, βωμόν τε καὶ συνοχὴν καὶ μέτρον φύσεως· καὶ πάλιν πῦρ ἕτερον ἀνωτάτω, τὸ περιέχον. πρῶτον δ' εἶναι φύσει τὸ μέσον, περὶ δὲ τοῦτο δέκα σώματα θεῖα χορεῦειν, οὐρανόν, <πέν>τε<sup>15</sup> πλανήτας, μεθ' οὓς ἥλιον, ὅφ' ὃ σελήνην, ὅφ' ἡ τὴν γῆν, ὅφ' ἡ τὴν ἀντίχθονα, μεθ' ἃ σύμπαντα τὸ πῦρ ἐστίας περὶ τὰ κέντρα τάξιν ἐπέχον. τὸ μὲν οὖν ἀνωτάτω μέρος τοῦ περιέχοντος, ἐν ὃ τὴν εἰλικρίνειαν εἶναι τῶν στοιχείων, Ὀλύμπου καλεῖ· τὰ δὲ ὑπὸ τὴν τοῦ Ὀλύμπου φοράν, ἐν ὃ τοὺς πέντε πλανήτας μεθ' ἡλίου καὶ σελήνης τετάχθαι, Κόσμον. τὸ δ' ὑπὸ τούτοις ὑποσέληνόν τε καὶ περιέγειον μέρος, ἐν ὃ τὰ τῆς φιλομεταβόλου γενέσεως, Οὐρανόν. καὶ περὶ μὲν τὰ τεταγμένα τῶν

μετεώρων γίνεσθαι τὴν σοφίαν, περὶ δὲ τῶν γινομένων τὴν ἀταξίαν  
τὴν ἀρετὴν, τελείαν μὲν ἐκείνην, ἀτελεῖ δὲ ταύτην.

- 7 Ἐμπεδοκλῆς μὴ διὰ παντὸς ἐστῶτας<sup>16</sup> εἶναι μηδ' ὠρισμένους τοὺς  
τόπους τῶν στοιχείων, ἀλλὰ πάντα τοὺς<sup>17</sup> ἀλλήλων μεταλαμβάν-  
ναι.

- 1 P<sup>2</sup>EGQS<sup>1</sup>, om. τοῦ P<sup>1</sup> Mau Lachenaud, τῆς τοῦ κόσμου τάξεως S<sup>2</sup> (Laur.)  
2 om. S  
3 τε καὶ S, τοκέα Davis Diels DG, αἰτίαν Krische Wachsmuth, ἀρχὴν τε καὶ αἰτίαν  
Diels VS ex Simp.  
4 κληροῦχον S, κληδοῦχον omnes editores, cf. fr. 1.14 DK  
5 Krische, ὕψ' οὐ S  
6 διὰ ... συμπεπλεγμένον abest in P  
7 ἔνια δὲ πυκνά E  
8 συνάπτει τῷ πυρὶ E  
9 om. S  
10 ἀέρα P<sup>1</sup>, ἀέρα ἀπαθῆ τὸν αἰθέρα P<sup>2</sup>  
11 δέ τι P, δέ E, corr. Duebner  
12 ord. inv. Q  
13 ἀποδιδόναι P<sup>2</sup>  
14 ἐπ' ἐκεῖνα P<sup>2</sup>  
15 coniectimus, mss. οὐρανόν τε, τοὺς εἰ conj. Diels, quem secutus Wachsmuth, om.  
Huffman  
16 ἐστῶτα (sc. στοιχεῖα) Q  
17 locus corruptus secundum editores; sed sanus (πάντα sc. τὰ στοιχεῖα), cf. Plato  
Prot. 329e

§1 28A37 DK; §2 67A23 DK; §3 fr. 303 Usener; §4–; §5 T19 Gigon; §6 44A16 DK;  
§7 31A35 DK

## 7. On the order of the cosmos

- 1 Parmenides says there are bands wound around each other, the one  
made up of the rare, the other of the dense, while others between these  
are mixed from light and darkness. And that which surrounds them  
all is solid like a wall. Below it is a fiery band. And the most central  
(part) is also (solid), around which there is again a fiery band. Of the  
mixed bands the most central is both the ⟨origin⟩ and the ⟨cause⟩ of  
all motion and coming into being for all the others. He also calls it  
directive *daimôn*, holder of the keys, justice and necessity. And the air  
is what is separated from the earth, vaporized through the earth's  
stronger condensation, while the sun and the Milky Way are the  
exhalation of fire. The moon is a mixture of both, air and fire. The  
ether encircles above everything else, and below it the fiery (part) is  
disposed which we call heaven, below which the earthly regions have  
their place.
- 2 Leucippus and Democritus stretch around the cosmos a cloak and a  
membrane woven together by means of hook-shaped atoms.
- 3 Epicurus (declares that) the limit of some *kosmoi* is rare but of others



it is dense, and of these (limits) some are in motion, while others are immobile.

- 4 Plato (declares that) there is first fire, then ether, followed by air, after which there is water, and earth is last. But sometimes he links up ether with fire.
- 5 Aristotle (declares that) impassible ether is first, which is in fact a fifth body. After it (follow) the passible (elements) fire, air, water, and earth is last. And of these to the heavenly (regions) circular motion is given, whereas in the case of the (elements) below them upward (motion is given) to the light ones and downward (motion) to the heavy ones.
- 6 Philolaus (declares that) there is fire in the middle around the centre, which he calls the universe's hearth and Zeus' house and the gods' mother, altar and maintenance (or continuity) and measure of nature. And again there is another highest fire, that which surrounds (the universe). The centre is first by nature, and around this ten divine bodies dance: the heaven, the five planets, after them the sun, under it the moon, under it the earth, under it the counter-earth, and after all of them there is fire, which has the position of the hearth in relation to the centres. Moreover he calls the highest part of the surrounding (region) Olympus, in which he says the purity of the elements exists, while the (region) under the orbit of Olympus, in which the five planets together with the sun and the moon are positioned, (he calls) Kosmos. The sublunary and earthly part below these, in which the (realm) of change-loving generation (is located), (he calls) Heaven. He also declares that wisdom arises concerning what is ordered in the regions on high, whereas excellence arises concerning the disorder of what comes into being, and the former is complete, but the latter incomplete.
- 7 Empedocles (declares that) the locations of the elements are not completely fixed or determined, but (they) all share in the locations of each other.

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Aristotle** *Cael.* 2.2 285b33–86a2, περὶ μὲν οὖν τῶν κατὰ τὰς διαστάσεις τῶν μορίων καὶ τῶν κατὰ τόπον ὠρισμένων τοσαῦτα εἰρήσθω; cf. also 2.3 286a11–21, ἐπεὶ δ' ὁ οὐρανὸς τοιοῦτος (σῶμα γάρ τι θεῖον), διὰ τοῦτο ἔχει τὸ ἐγκύκλιον σῶμα, ὃ φύσει κινεῖται κύκλῳ ἀεὶ ... ἀνάγκη τοίνυν γῆν εἶναι· τοῦτο γάρ ἡρεμεῖ ἐπὶ τοῦ μέσου. **Ps.Aristotle** *De mundo* 2, 391b11–16, κόσμος μὲν οὖν ἐστὶ σύστημα ἐξ οὐρανοῦ καὶ γῆς καὶ τῶν ἐν τούτοις περιεχομένων φύσεων. λέγεται δὲ καὶ ἑτέρως κόσμος ἢ τῶν ὅλων τάξις τε καὶ διακόσμησις, ὑπὸ θεοῦ τε καὶ διὰ θεὸν φυλαττομένη. ταύτης δὲ τὸ μὲν μέσον, ἀκίνητόν τε καὶ ἑδραῖον ὄν, ἢ φερέσβιος εἴληγε γῆ, παντοδαπῶν ζώων ἐστία τε οὔσα καὶ μήτηρ. τὸ δὲ ὑπερθεὶν αὐτῆς, πᾶν τε καὶ πάντῃ πεπερατωμένον εἰς τὸ ἀνωτάτω, θεῶν οἰκητήριον, οὐρανὸς ὠνόμασται; 392a6 οὐρανοῦ δὲ καὶ ἄστρων οὐσίαν μὲν αἰθέρα καλοῦμεν; 392a31 μετὰ δὲ τὴν αἰθέριον καὶ θεῖαν φύσιν, ἥντινα τεταγμένην ἀποφαίνομεν, ἔτι δὲ

ἄτρεπτον καὶ ἀνετεροίωτον καὶ ἀπαθὴ, συνεχὴς ἐστὶν ἢ δι' ὅλων παθητὴ τε καὶ τρεπτὴ, καί, τὸ σύμπαν εἶπειν, φθαρτὴ τε καὶ ἐπίκληρος. ταύτης δὲ αὐτῆς πρώτη μὲν ἐστὶν ἡ λεπτομερὴς καὶ φλογώδης οὐσία ...; 392b6 ἔξης δὲ ταύτης ὁ ἀήρ ὑποκέχυται; §3 392b14 ἔξης δὲ τῆς ἀερίου φύσεως γῆ καὶ θάλασσα ἐρήρεισται, φυτοῖς βρύουσα καὶ ζῳοῖς πηγαῖς τε καὶ ποταμοῖς, τοῖς μὲν ἐν γῇ ἀναλισκομένοις, τοῖς δὲ ἀνερευγομένοις εἰς θάλασσαν ... **Ps.Hippocrates** *De hebd.* 2 42–99 Roscher, μίαν μὲν (ἐν) πᾶσι τάξιν τὴν τοῦ ἀκρίτου κόσμου ἔξο(δον) ἔχοντος θεοῦ καὶ χειμῶνος, δευτέραν δὲ τάξιν τὴν τῶν ἀστρῶν ἀνταυγίαν καὶ μάνωσιν (ἐ)οῦσαν θερμοτάτην καὶ ἀραιωτάτην τῆς φύσεως λαμπηδόνα. τρίτην ἡλίου δίοδον θερμασ(ίαν) ἔχοντ(ος). τετάρτην σελήνης ἀνιούσης καὶ τελειούσης προσθέσει καὶ μειούσης ἀφαι(ρέσει). πέμπτη μοῖρα ἡ τοῦ ἡέρος σύστασις καὶ κόσμος, παρέχουσα ὑετοὺς καὶ ἀστραπὰς, β(ροντάς) ..... καὶ χίονας ..... ἔκτον τὸ τῆς θαλάττης ὑγρὸν μέρος καὶ ποταμῶν καὶ κρηνῶν καὶ πηγῶν καὶ λιμνῶν καὶ (ἐνεὸν) τούτοις θερμόν, ὃ ἀγωγὴ καὶ ἄρδευσις ἐστὶ τῆς ἱκμάδος. ἕβδομον αὐτὴ ἡ γῆ, ἐφ' ἣ τά τε ζῶα ...· καὶ ἐστὶ πάντροφος ἐξ ὕδατος ἐοῦσα. οὕτως οἱ τῶν ξυμπάντων κόσμοι ἐπταμερέα ἔχουσι τὴν τάξιν. **Philo** *Congr.* 103–104, ἔμαθον γὰρ τὸν ἑνατον ὑπερβαίνοντες αἰσθητὸν δοκῇσι θεὸν τὸν δέκατον καὶ μόνον ὄντα ἀψευδῶς προσκυνεῖν. ἐννέα γὰρ ὁ κόσμος ἔλαχε μοίρας, ἐν οὐρανῷ μὲν ὀκτώ, τὴν τε ἀπλανῆ καὶ ἐπτά τὰς πεπλανημένας ἐν τάξεσι φερομένας ταῖς αὐταῖς, ἐνάτην δὲ γῆν σὺν ὕδατι καὶ ἀέρι· τούτων γὰρ μία συγγένεια τροπὰς καὶ μεταβολὰς παντοίας δεχομένων ... **Simplicius** *in Cael.* 398.12–401.13 (cites Alexander, Nicolaus of Damascus, Plato on the location of elements).

## Aëtius *Placita* 2.8

Τίς ἡ αἰτία τοῦ τὸν κόσμον ἐγκλιθῆναι

### WITNESSES

Ps.Plutarch 2.8, Eusebius 15.39, ps.Galen 51, Qusṭā Ibn Lūqā 2.8  
Stobaeus 1.15.6cd

### ANALYSIS

1. The following three chapters now treat specific aspects of the ordering of the cosmos as a whole. For the present chapter we can compare P 3.12 Περί ἐγκλίσεως γῆς, which follows on the chapter Περί θέσεως γῆς, the equivalent in Book III of ch. 7 Περί τάξεως τοῦ κόσμου. Both these chapters too can be placed under the category of ‘being in a certain position’ (κεῖσθαι).<sup>199</sup> Various chapters in A focus on the question of cause, but the formula τίς ἡ αἰτία in the title is found only here.<sup>200</sup> He more often writes either πῶς or διὰ τί.

2. P has preserved the following text with two lemmata:

η'. Τίς ἡ αἰτία τοῦ τὸν κόσμον ἐγκλιθῆναι

- P2.8.1 Διογένης Ἀναξαγόρας μετὰ τὸ συστήναι τὸν κόσμον καὶ τὰ ζῶα ἐκ τῆς γῆς ἐξαγαγεῖν ἐγκλιθῆναι πῶς τὸν κόσμον ἐκ τοῦ αὐτομάτου εἰς τὸ μεσημβρινὸν αὐτοῦ μέρος, ἴσως ὑπὸ προνοίας, ἵν' αὐτὸ μὲν [τινα] ἀοίκητα γένηται ἅ δ' οἰκητὰ μέρη τοῦ κόσμου κατὰ ψῦξιν καὶ ἐκπύρωσιν καὶ εὐκρασίαν.
- P2.8.2 Ἐμπεδοκλῆς τοῦ ἀέρος εἷξαντος τῇ τοῦ ἡλίου ὀρμῇ, ἐγκλιθῆναι τὰς ἄρκτους, καὶ τὰ μὲν βόρεια ὑψωθῆναι τὰ δὲ νότια ταπεινωθῆναι, καθ' ὃ καὶ τὸν ὅλον κόσμον.

The other witnesses contribute little further. E changes the order at the end of the first doxa so that the temperate climate is in between the hot and the cold. Q leaves out two whole phrases. G adheres rather closely to his source, but simplifies the Empedoclean doxa by

<sup>199</sup> See the comments in Part I sect. 9 preceding n. 244 and our remarks in ch. 7 sect. 1.

<sup>200</sup> As noted in Part I sect. 15 at n. 350.

attributing the source of the tilt to fire (i.e. of the sun) and also leaving out the extension of the tilt to the whole cosmos.

3. S has included both lemmata close together in his § 15 *περὶ σχημάτων*. He does not, however, include the title of this chapter in his chapter 22, in spite of the impression given by Diels in his reconstruction.<sup>201</sup> The two lemmata are very similar to what we find in P:

1.15 title    *Περὶ σχημάτων*

1.15.6c

S1    *Διογένης καὶ Ἀναξαγόρας ἔφησαν, μετὰ τὸ συστήναι τὸν κόσμον καὶ τὰ ζῷα ἐκ τῆς γῆς ἐξαγαγεῖν ἐγκλιθῆναι πῶς τὸν κόσμον ἐκ τοῦ αὐτομάτου εἰς τὸ μεσημβρινὸν αὐτοῦ μέρος, ὥς ὑπὸ προνοίας, ἵν' αἱ μὲν αἰκίητα γένηται αἱ δὲ οἰκίητα μέρη τοῦ κόσμου κατὰ ψῦξιν καὶ ἐκπύρῳσιν καὶ εὐκρασίαν.*

1.15.6d

S2    *Ἐμπεδοκλῆς  
—τοῦ δὲ ἀέρος εἷξαντος τῇ τοῦ ἡλίου ὀρμῇ ἐγκλιθῆναι τὰς ἄρκτους, καὶ τὰ μὲν βόρεια ὑψωθῆναι, τὰ δὲ νότια ταπεινωθῆναι, καθὸ καὶ τὸν ὅλον κόσμον.*

The usual signs of modification can be observed (in S1 name-labels joined by *καί*, addition of *δὲ* in S2). S1 is included straight after the two lemmata on the shape of the cosmos (= A 2.1, 4\*), resulting in a somewhat awkward sequence. S2 is included in a cluster of three coalesced Empedoclean doxai from the chapters 7, 8 and 10. Here the sequence is even more awkward (the first doxa from ¶7 in fact does not relate to the subject of the chapter at all). In addition, the contrast with the previous lemma, which is clear in P, is obscured by the intervening lemma.

4. Both T and Ach are silent on the subject of the inclination of the cosmos. The only text that is marginally related is the mention of possible deviations or wobbles of the cosmos in an anonymously attributed argument against the existence of a void outside the cosmos in Ach 8, 38.17 Maass ~ 18.4 Di Maria.

5. It needs some imagination to understand the problem raised in this chapter. In the standard Platonic-Aristotelian cosmological model that became dominant in antiquity, both the cosmos and the earth cannot

<sup>201</sup> He was misled by ms. L, which has been contaminated from P; see above ch. 6 n. 165.

be said to be tilted. The celestial North Pole of the spherical cosmos is directly above the earthly North Pole of the spherical earth. The tilt pertains to the bands of movement of the zodiacal circle and the planetary motions. However, as we saw in ¶2, not all cosmologies maintain a spherical cosmos, just as not all thinkers posit a spherical earth in A at P 3.10. For an observer standing in the temperate zone of the northern hemisphere, the celestial North Pole does not appear directly overhead, so it seems either that the heaven is tilted in relation to the earth or that the earth is tilted in relation to the heaven. The cosmologies in this chapter and its twin at P 3.12 on the inclination of the earth in fact pre-date the standard cosmological model. They appear to assume something like a flat or cylindrical earth, although this assumption is not mentioned explicitly. Other related chapters are ¶12 on the celestial zones and ¶24 on the solstices of the sun, but both of these assume the standard model.

6. There is no evidence to suggest that the chapter originally had any more than two lemmata. This would mean that P has written out his source in full. If there are only two lemmata (elsewhere in A's Book II this occurs only at ¶12 and ¶18), then either they form a list of two random views or they form an opposition in a type A diaeresis. Given A's usual methods, the latter is more likely, but what is the point at issue?

In the first lemma representing the views of Diogenes of Apollonia and Anaxagoras no direct reason is given, but the tilt happens 'somehow' (πώς) of its own accord without any form of intervention (ἐκ τοῦ αὐτομάτου). It may be assumed that in the anterior source (and also in the original works) no explicit cause was given.<sup>202</sup> Laks, thinking no doubt of Plato's famous criticism of Anaxagoras at *Phd.* 98b–c, interprets the second possibility in terms of a mechanistic approach.<sup>203</sup> We prefer to read it as more or less equivalent to a random or chance cause.<sup>204</sup> We might compare a doxographical text in Philo *Ebr.* 199,

<sup>202</sup> Cf. Guthrie (1962–1981) 2.305, who ignores the probability of an intermediate source between Anaxagoras' writing and Aëtius.

<sup>203</sup> Laks (1983) 203, where he translates ἐκ τοῦ αὐτομάτου with 'méchaniquement'. Note that if Anaxagoras had done what Plato accused him of (ἀέρας δὲ καὶ αἰθέρας καὶ ὕδατα αἰτιώμενον καὶ ἄλλα πολλὰ καὶ ἄτοπα), this would agree more with the Empedoclean doxa presented here than the one attributed to Anaxagoras himself.

<sup>204</sup> Aristotle makes a distinction between chance and spontaneity at *Ph.* 2.6, but this can be ruled out here.

most likely taken over from a sceptical source,<sup>205</sup> in which there is an opposition between spontaneous or random movement (ἀπαντοματιζοῦσα φορά) and providential activity (πρόνοια) in relation to the governance of the cosmos (text cited below). The next phrase, 'perhaps through the agency of providence' (ἴσως ὑπὸ προνοίας), coupled with a final clause expressing purpose, should not be taken (in spite of the Philonic text) as an antithetical view, but rather as a critical comment on the part of the doxographer (or his anterior source). As Laks notes, it shows the influence of Stoic philosophy, which regarded the distribution of habitable and uninhabitable regions as providential.<sup>206</sup>

In the case of Empedoclean doxa, however, the reason is specifically indicated, namely the giving way of the air to the onrush of the sun, even if it is very difficult to work out precisely what is meant.<sup>207</sup> It is at any rate clear that it is a purely mechanical cause involving the elements. The tilt is then projected to the entire cosmos, i.e. once the earth tilts the heaven appears to be tilted to the observer standing on it (who otherwise would not notice the tilt).

What then is the contrast between the two views? One possibility is the antithesis between no specified cause and a specified, i.e. mechanical, cause. But it seems that the first doxa does give a cause of a particular kind. We prefer, therefore, to see the contrast as an opposition between a *second order* (or *non-physical*) cause in terms of spontaneity or chance and a *physical-mechanistic* explanation in terms of the nature of the elements. In the case of the first doxa it is perhaps surprising that we do not get a further diaeresis between spontaneity/chance and providence, as is found in Philo. Perhaps A was unable to locate material which provided him with this further possibility (the comment on providence, as we saw, is probably an addition). It may be surmised that in the original summary of the cosmogony relating to Diogenes and/or Anaxagoras, some comment was made on this lack of cause, which induced the doxographer to pick it up and contrast it with another Pre-

<sup>205</sup> *Ebr.* 170–202 is based on the tropes of Aenesidemus (it is our earliest witness). We cannot be sure whether the example was in the source or was added by Philo, but both the formulation and the parallels in Cicero, Sextus and D.L. make the former more likely; cf. Mansfeld (1987) 134.

<sup>206</sup> Cf. Laks (1983) 204, adducing D.L. 7.156; cf. also Philo *Prov.* 2.83–84 (arguments against and for providence).

<sup>207</sup> Furley (1987) 93 n. 13 declares his puzzlement. Guthrie (1962–1981) 2.192 assumes that the air stands for the dark hemisphere, which cedes to the illuminated one. O'Brien (1969) 296 relates it to the beginning of the movement of the hemispheres, as stated in ps.Plu. *Str.* 10 (= 31A30 DK).

socratic thinker. He thus had to indulge in speculation in order to reach his basic opposition.

7. The subject of this chapter concerns a minor detail of obscure cosmogonies. It is hardly surprising that we have not been able to find any parallel passages which mention it as subject or record the disagreement which it contains. No attention is given to this subject, for example, in Aristotle's *De Caelo*, which established the framework for so many later cosmological treatises (cf. for example 2.13 which discusses the location, motion—or lack thereof—and shape of the earth, which finds substantial echoes in P 3.9–11 & 13, but does not mention the earth's tilt as discussed in 3.12).<sup>208</sup>

An interesting passage in the ps.Platonic dialogue *Erastai* mentions discussion of the phenomenon of tilting (text cited below). It is in fact possible that the doxographer or his source hit upon this contrast when studying descriptions of Presocratic cosmogonies attributed to individual philosophers and proceeded to oppose them in a short chapter. In the parallels below we have included a few texts which are reminiscent of the kind of material he could have had in front of him, even if the parallels are not precise. The most interesting of these texts is Philo *Prov.* 2.60, where Alexander cites Empedocles' view on the stability of the earth as caused by the surrounding spheres of elements rather than through the workings of providence. The antithesis is similar to what we find in A.<sup>209</sup>

As noted above, the doxographer associates the question here with early cosmogonic (and not cosmological) theories of the pre-Platonic type. In a sense, then, it would have been better placed after 2.6 rather than 2.7. The remaining chapters on the cosmos and the heaven, 2.9–12, all discuss cosmological questions without reference to any kind of cosmogony.

STRUCTURE (see above sect. 6)

- |  |  |
|--|--|
| <p>A second order non-physical explanation</p> <p>1 spontaneous, perhaps providential (= §1)</p> <p>B physical-mechanistic explanation</p> <p>2 air yielding to onrush of sun (= §2)</p> |  |
|--|--|

<sup>208</sup> See the discussion in Mansfeld (1992a) 103–109.

<sup>209</sup> But the subject is closer to P 3.9–13 (where there is no mention of Empedocles). Cf. Aristotle's treatment of Empedocles' theories at *Cael.* 2.13 295a17–33.

## RECONSTRUCTED TEXT

ἡ. Τίς ἡ αἰτία τοῦ τὸν κόσμον ἐγκλιθῆναι<sup>1</sup>

- 1 Διογένης Ἀναξαγόρας<sup>2</sup> μετὰ τὸ συστήναι τὸν κόσμον καὶ τὰ ζῶα ἐκ τῆς γῆς ἐξαγαγεῖν<sup>3</sup> ἐγκλιθῆναι πῶς τὸν κόσμον ἐκ τοῦ αὐτομάτου εἰς τὸ μεσημβρινὸν αὐτοῦ μέρος, ἴσως ὑπὸ προνοίας, ἵν' ἃ μὲν [τινα]<sup>4</sup> ἀοίκητα γένηται ἃ δ' οἰκητὰ μέρη τοῦ κόσμου κατὰ ψῦξιν καὶ ἐκπύρῳσιν καὶ εὐκρασίαν<sup>5</sup>.
- 2 Ἐμπεδοκλῆς τοῦ ἀέρος<sup>6</sup> εἷξαντος τῇ τοῦ ἡλίου ὀρμῇ, ἐγκλιθῆναι<sup>7</sup> τὰς ἄρκτους<sup>8</sup>, καὶ τὰ μὲν<sup>9</sup> βόρεια ὑψωθῆναι τὰ δὲ νότια ταπεινωθῆναι, καθ' ὃ καὶ τὸν ὅλον κόσμον.

1 ἐγκεκλίσθαι P<sup>2</sup>

2 Διογένης καὶ Ἀναξαγόρας ἔφησαν S

3 καὶ τὰ ζῶα ἐκ τῆς γῆς ἐξαγαγεῖν om. Q

4 τὰ μὲν ... τὰ δέ E, τινα secl. Diels Mau Lachenaud

5 PSQ, κατὰ ἐκπύρῳσιν καὶ εὐκρασίαν καὶ ψῦξιν E, κατὰ ἐκπύρῳσιν καὶ ψῦξιν G

6 πυρός G

7 ἐπικλιθῆναι E, ἐπικλίνειν G

8 ἐγκλιθῆναι τὰς ἄρκτους om. Q

9 om. E

§ 1a 64A11 DK; § 1b 59A67 DK; § 2 31A58 DK

8. What is the cause of the cosmos having been tilted

- 1 Diogenes and Anaxagoras (declare that) after the cosmos had been formed and had produced the animals from the earth, the cosmos somehow of its own accord was tilted towards its mid-day region; (this occurred) perhaps through the agency of providence, so that some of the cosmos' parts are uninhabitable, but others are habitable in virtue of chilling and excessive heating and temperate climate.
- 2 Empedocles (declares that), when the air gave way through the onrush of the sun, the (north and south) poles were tilted, and the northern regions were lifted up, but the southern regions were lowered, just as was the case for the entire cosmos.

## DIALECTICAL-DOXOGRAPHIC PARALLELS

**Ps.Plato** *Erastai* 132a4–b3, ἐτυγχανέτην οὖν δύο τῶν μειρακίων ἐρίζοντε, περὶ ὅτου δέ, οὐ σφόδρα κατήκουον. ἐφαινέσθην μέντοι ἢ περὶ Ἀναξαγόρου ἢ περὶ Οἰνοπίδου ἐρίζειν· κύκλους γοῦν γράφειν ἐφαινέσθην καὶ ἐγκλίσεις τινὰς ἐμμοῦντο τοῖν χερσὶν ἐπικλίνοντε καὶ μάλ' ἐσπουδαζότε. **Philo** *Ebr.* 199, οἱ χωρὶς ἐπιστάτου καὶ ἡγεμόνος ἀλόγου καὶ ἀπαντοματιζούσης ἐξάψαντες φορᾶς (sc. εἰσηγούμενοι) τοῖς ὑπολαμβάνουσι πρόνοιαν καὶ ἐπιμέλειαν ὅλου καὶ τῶν μερῶν



θαυμαστήν τιν' εἶναι ἡνιοχοῦντος καὶ κυβερνῶντος ἀπταίστως καὶ σωτηρίως θεοῦ πῶς ἂν δύναιντο τὰς αὐτὰς καταλήψεις τῶν ὑποκειμένων ποιεῖσθαι πραγμάτων; cf. *Praem.* 41–42. *Prov.* 2.60 Aucher (Alexander arguing against Philo's teleology), eodem modo et mundi partes affici videntur, ut dicit Empedocles ... terra vero concurrens in unum spatium et necessario condensata apparens, in medio sta. porro circa eam undique, quoniam nimis levior etat, volvitur absque dimotione aether. quietis autem exinde ratio datur per Deum, non vero per sphaeras multas super se invicem positas, quarum circumrotationes poliverunt figuram. quia circa eam coarctata fuit sphaera ignis mirabilis; magnae enim et multiplicis theoriae vim habet: ideo ne huc, nec illuc cadit ista. **Diogenes Laertius** 2.9 (on Anaxagoras), τὰ δ' ἄστρα κατ' ἀρχὰς μὲν θολοειδῶς ἐνεχθῆναι, ὥστε κατὰ κορυφὴν τῆς γῆς τὸν αἰὲ φαινόμενον εἶναι πόλον, ὕστερον δὲ τὴν ἔγκλισιν λαβεῖν. **Hippolytus** *Ref.* 1.9 (on Archelaos), ἐπικλιθῆναι δὲ τὸν οὐρανὸν φησι καὶ οὕτως τὸν ἥλιον ἐπὶ τῆς γῆς ποιῆσαι φῶς, καὶ τὸν τε ἀέρα ποιῆσαι διαφανή καὶ τὴν γῆν ξηράν.

## Aëtius *Placita* 2.9

Περὶ τοῦ ἔκτος τοῦ κόσμου, εἰ ἔστι κενόν

### WITNESSES

Ps.Plutarch 2.9, Eusebius 15.40, ps.Galen 52, Qusṭā Ibn Lūqā 2.9

Stobaeus 1.18.4bc

Cf. Achilles 8, *Anonymus* I §3

### ANALYSIS

1. The next chapter takes as its point of departure a single cosmos and then asks the question whether there is empty space outside it. Earlier in his compendium A has already broached the subject on a number of occasions. It is briefly touched upon both in A 1.5 and A 2.1 on whether the cosmos is one or multiple (see ch. 1 sect. 9d), and is significantly discussed in A 1.18 Περὶ κενοῦ. It will emerge that we cannot analyse the present chapter without also taking this earlier chapter into account.<sup>210</sup>

2. In the manuscripts of P we find the following text:

θ'. Περὶ τοῦ ἔκτος τοῦ κόσμου, εἰ ἔστι κενόν

P2.9.1 οἱ μὲν ἀπὸ Πυθαγόρου ἔκτος εἶναι τοῦ κόσμου κενόν, εἰς δὲ ἀναπνεῖ ὁ κόσμος καὶ ἐξ οὗ.

P2.9.2 οἱ δὲ Στωικοί, εἰς δὲ κατὰ τὴν ἐκπύρωσιν ἀναλύεται, τὸ ἄπειρον.

P2.9.3(?) Ποσειδώνιος οὐκ ἄπειρον ἀλλ' ὅσον αὐταρκες εἰς τὴν διάλυσιν ἐν τῷ πρώτῳ Περὶ κενοῦ Ἀριστοτέλης ἔλεγεν εἶναι κενόν Πλάτων μὴτ' ἔκτος τοῦ κόσμου μὴτ' ἐντὸς μηδὲν εἶναι κενόν

We have cited the final part of the chapter as it is found in the mss. without punctuation. Mau brackets the words ἐν τῷ πρώτῳ Περὶ κενοῦ and ἔλεγεν, but reads μηδὲν εἶναι κενόν for the Aristotelian lemma. Diels and Lachenaud print texts emended on the basis of evidence in the

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<sup>210</sup> For this chapter we are indebted to the meticulous analyses of Algra (1993) and Primavesi (forthcoming), both of whom examine the combined evidence of A 1.18 and 2.9. See also the comments above in Part I sect. 8 at n. 214, where we argue that the chapter in Book I is to some extent superfluous and is evidence of Stoic influence on the structure of the *Placita*.

other witnesses. In order to determine what the original reading of P was we will have to pay more attention to them than usual. G, however, must be set to one side (except for his title), as his abridged version is completely garbled.<sup>211</sup>

Comparison with E and Q gives rise to the following problems.

- (a) The long title is found only in P.<sup>212</sup> EG have Περί τοῦ ἐκτὸς only. We retain the long title, which could easily have been abbreviated. The short title obscures the link with P 1.18 Περί κενού. Many of A's titles contain the εἰ question, which goes back to Aristotle's philosophy of science in *APo.* B 1 and plays an important role in the *Placita*;<sup>213</sup> cf. ¶3, ¶4, P 1.5, P 4.3 etc.; for double titles combining περί and εἰ cf. 4.23, 5.29.<sup>214</sup>
- (b) The first lemma attributed to Pythagoras poses no problems. It is plainly linked to the final lemma in P 1.18.<sup>215</sup>
- (c) In the Stoic lemma the words ἐκτὸς εἶναι τοῦ κόσμου κενόν are assumed from the previous lemma. Diels is right to prefer E's reading [τὸ] ἄπειρον, but P's κατὰ τὴν ἐκπύρωσιν can be retained against E's καὶ τῇ ἐκπυρώσει.
- (d) As noted above, the final part of the chapter is highly problematic. In the two other witnesses we read:

E Ποσειδώνιος οὐκ ἄπειρον ἀλλ' ὅσον αὐταρχες εἰς τὴν διάβασιν.  
Πλάτων Ἀριστοτέλης μὴτ' ἐκτὸς τοῦ κόσμου μὴτ' ἐντὸς μηδὲν εἶναι  
κενόν.

Q Poseidonios glaubte, daß es kein Unendliches gibt, sondern soviel wie zur Auflösung benötigt wird. Platon und Aristoteles glaubten, daß es überhaupt kein Vakuum gibt, weder außerhalb noch innerhalb der Welt.

Diels cuts the knot by simply printing the text of E as P (except he retains διάλυσιν). In his apparatus he notes the mss. read Ἀριστοτέλης ἔλεγεν εἶναι κενόν, i.e. without the reading μηδὲν printed by Mau. He also repeats the assertion at *DG* 9, and it is confirmed by Lachenaud.<sup>216</sup>

<sup>211</sup> He opposes the Pythagorean view (though the name-label is missing in the mss.), in which the cosmos breathes into and out of the void, to the Stoic view, in which the cosmos only breathes into the void, followed by the Platonic view that there is neither an internal nor an external void, except a small amount outside for the cosmos to breathe into. Though crazy, the use of contrasting positions does follow the method of the *Placita*!

<sup>212</sup> And, it seems, one ms. of Q (with a different longer title in the index of titles at the beginning of Book II). See Daiber (1980) *ad loc.*

<sup>213</sup> See above Part I sect. 14 at n. 351, also further Mansfeld (1990a) 3198, (1992a) 92.

<sup>214</sup> In these two examples, however, there are two subjects joined with καί, not a single subject as in the present chapter.

<sup>215</sup> This already indicates that the attribution to Aristotle in P 1.18 must be wrong.

<sup>216</sup> Diels claims *ad loc.* that the false Aristotelian doxa was printed without any suspicion by earlier editors, but this is not true. Wyttenbach (1797) in vol. 4 of his edition of the *Moralia* notes that the mss. record *mendose* the view that Ἀριστοτέλης ἔλεγεν εἶναι κενόν.

The bracketed words ἐν τῷ πρώτῳ Περί κενοῦ have given rise to much speculation. Both distinguished commentators on Posidonius, Kidd and Theiler, argue that the book title should be taken with the Posidonian lemma, since it must have come from somewhere.<sup>217</sup> Kidd is able to show that the arguments of Diels and Mau are insufficient. However, he neglects other considerations which militate against his conclusion. (1) *Laudationes* are scarce in the *Placita*, but when they do occur the reference is placed directly after the name of the author or tied to a separate verb or participle.<sup>218</sup> The separation in P's text is thus stylistically improbable. (2) P usually omits *laudationes*, whereas S retains them; yet here it is the other way around. We note especially what happens in the parallel chapter P 1.18.5 where, in suppressing the reference that indicates that Aristotle is being cited on the Pythagoreans, P makes a very bad mistake. The *laudatio* must therefore go with the Aristotelian doxa. Yet that gives rise to new problems. (1) Aristotle wrote no such book. (2) *Laudationes* in A always follow the name-label. However, it is possible to solve all these problems along the following lines. The entire comment ἐν τῷ πρώτῳ Περί κενοῦ Ἀριστοτέλης ἔλεγεν εἶναι κενόν should be taken as a marginal gloss by a reader who noted that in the chapter Περί κενοῦ in Book I Aristotle was credited (mistakenly of course) with the view that there was a limited void outside the cosmos. The gloss found its way into the text and supplanted the genuine mention of the name-label Aristotle which was linked with that of Plato in the final doxa. If this solution is accepted, then all speculation about a Posidonian work on the void is groundless.<sup>219</sup> The remainder of the Posidonian doxa is not in dispute (and is confirmed by S).

On the basis of these considerations we conclude that Diels was correct in following E rather than P and that his judgment was confirmed by the evidence of Q. This means that the separate references to Aristotle and Plato in the mss. of P should be joined together in a double name-label, with the order reversed as in EQ.

The second half of P's chapter should thus be read as follows:

- P2.9.3 Ποσειδώνιος οὐκ ἄπειρον, ἀλλ' ὅσον αὐταρκες εἰς τὴν διάλυσιν.  
 P2.9.4 Πλάτων Ἀριστοτέλης μήτ' ἐκτὸς τοῦ κόσμου μήτ' ἐντὸς μηδὲν εἶναι κενόν.

<sup>217</sup> Kidd (1988) 336 on F84 & 97 E.-K., Theiler (1982) 2.179 = F302. It has to be said that Kidd's handling of the passage is somewhat cryptic, since the unemended text is printed as F84 (because of the book-title), the emended text as F97.

<sup>218</sup> See Vol. I:192 and Runia (1992) 122.

<sup>219</sup> In an earlier draft of the chapter we suggested that the marginal gloss might have referred to Aristotle's *De caelo* 1.9 279a12, i.e. ἐν τῷ πρώτῳ Περί οὐρανοῦ, but at some stage the letters OYPAN were changed to KEN, in accordance with the subject of the chapter. As Algra (1993) 480 notes, this is paleographically not so likely. In our view the hypothesis that the gloss refers to Book I of P himself is more persuasive.

3. S's evidence is valuable, but adds nothing substantial to P. It hardly comes as a surprise that the anthologist coalesces this chapter with the chapters in Book I, 1.18 *Περὶ κενοῦ*, 1.19 *Περὶ τόπου*, 1.20 *Περὶ χώρας*. He records all four lemmata in the following manner:<sup>220</sup>

- 1.18 title    *Περὶ κενοῦ καὶ τόπου καὶ χώρας*  
 1.18.4b  
 S1            οἱ (ἀπὸ) Πυθαγόρου ἐκτὸς εἶναι τοῦ κόσμου κενόν, εἰς ὃ ἀναπνεῖ  
                  ὁ κόσμος καὶ ἐξ οὗ.  
 S2            οἱ Στωικοὶ εἶναι κενόν, εἰς ὃ κατὰ τὴν ἐκπύρρωσιν ἀναλύεται ὁ  
                  κόσμος, ἄπειρον ὄν.  
 S3            Ποσειδώνιος ἔφησε τὸ ἐκτὸς τοῦ κόσμου οὐκ ἄπειρον, ἀλλ' ὅσον  
                  αὐταρκες εἰς διάλυσιν.  
 1.18.4c  
                  Πλάτων τόπον εἶναι ... (= P 1.19.1)  
 S4            —κενὸν δὲ μὴ εἶναι μήτε ἐκτὸς τοῦ κόσμου, μήτε ἐν τῷ κόσμῳ.  
                  λέγει γὰρ ἐν τῷ Τιμαίῳ οὕτως· (*Ti.* 32c5–33a2, 33b7–c4 are cited)

The first three lemmata are copied from A as a block. The fourth lemma is coalesced with a Platonic lemma from P 1.19. S this time does copy out the Platonic lemma in P 2.9, even though it will be followed by a quote from the *Timaeus*. Perhaps he chooses to retain it because Plato does not expressly mention an external void in the text quoted and the lack of internal void is not mentioned until later at 58a (not cited). The name-label of Aristotle, however, is left out. This may have been done inadvertently, but it is more likely that S felt that he had cited Aristotle's views at length earlier in the chapter at 1c, where he combined material from A (≈ P 1.18.5) and AD; on this see our discussion in Vol. I:251–252.<sup>221</sup>

4. T does not make use of this chapter, having extensively copied out most of 1.18 on the void as part of his book entitled *Περὶ ὕλης καὶ κόσμου* (4.14). But we do find some very interesting indirect evidence on the doxographical treatment of the subject in Achilles. The relevant passage is in his chapter entitled *εἰ ἔστι τι ἐκτὸς κενόν*:

*Isagoge* 8, 38.10–20 Maass ~ 17.20–18.7 Di Maria

- Ach1            οἱ μὲν εἶναι τι ἐκτὸς φασιν, ὥσπερ καὶ Ἐπίκουρος (ὃς καὶ ἀπείρους  
                  κόσμους ὑποτίθεται ἐν ἀπείρῳ τῷ κενῷ),

<sup>220</sup> The title mistakenly printed by Diels *DG* 338 is based on contamination; cf. ch. 6 n. 165. Its formulation differs from that in the mss. of P, but resembles the title in two mss. of Q; see Daiber (1980) *ad loc.*

<sup>221</sup> On this text see now the detailed analysis of Primavesi (forthcoming).

- Ach2 οἱ δὲ Στωικοὶ ἐκπύρῳσιν λέγοντες κόσμου κατὰ τινὰς ὁρισμένους χρόνους εἶναι κενὸν μὲν, οὐ μὴν ἄπειρόν φασιν, ἀλλὰ τοσοῦτον ὅσον χωρῆσαι τὸ πᾶν.
- Ach3 οἱ δὲ μηδὲν εἶναι λέγοντες χρόνῳτι λόγῳ τοιούτῳ τοῦ οὐρανοῦ σφαιρικῶς κινουμένου, εἰ ἔστι τι ἐκτὸς κενόν, συμβήσεται τὴν σφαῖραν παρεγκλίσεις τινὰς ὑπομένειν ἐξολισθαίνουσαν τῇδε κάκει· τοῦτο δὲ οὐ γίνεται· οὐκ ἄρα ἔστι κενόν· αἰεὶ γὰρ κατὰ τὰ αὐτὰ καὶ ἀπὸ τῶν αὐτῶν ὁρῶμεν τὰς ἀνατολάς καὶ τὰς δύνεις.

The title of the chapter is very similar to that of A,<sup>222</sup> and, just as in A, it is clearly part of a standard sequence of chapters on the cosmos. There are three positions, all of which show strong resemblance to what we find in A:

- Ach1 unlimited void exists, = Epicurus, cf. the list of atomists in A at P 1.18.3;
- Ach2 limited void, = Stoics, cf. the Posidonius lemma in P3;
- Ach3 no void at all, = anonymi, cf. Plato–Aristotle in P4.

As in P, the view that accepts the extra-cosmic void is given first, but it is attributed to Epicurus rather than the Pythagoreans. Epicurus' position is usefully connected with his view on unlimited *kosmoi*, which A does not do.<sup>223</sup>

A further doxographical text on the void closely related to the passage in Achilles just discussed is found in the brief pages entitled Ἐξ ἐτέρων σχολαίων εἰσαγωγή, edited by Maass under the heading *Anonymus* I (92.34–93.2):<sup>224</sup>

- §3 Εἰ ἔστηκεν ἡ γῆ ἢ κινεῖται<sup>225</sup>
- εἰ δὲ ἔστι τι κενὸν ἔξωθεν τοῦ οὐρανοῦ, οὐ περιεργὸς ἡμῖν ἡ ζήτησις.
- Anon1 πλὴν οἱ Στωικοὶ λέγουσιν εἶναι (ταύτῃ γὰρ διαφέρειν τὸ ὅλον τοῦ παντός),
- Anon2 ἀλλ' οὐκ ἄπειρον, ὥς Ἐπίκουρος καὶ οἱ λοιποί.

Here we have the same opposition between an unlimited and a limited void as well as the same name-labels that were found in Ach, but with the interesting extra titbit that he mentions the connection between the Stoic position and their distinction between τὸ ὅλον and τὸ πᾶν which

<sup>222</sup> Di Maria prefers the reading of some mss. without κενόν.

<sup>223</sup> But cf. the doxa of Metrodorus at P 1.5, S 1.22.3.

<sup>224</sup> It has not been edited by Di Maria in his edition of Achilles.

<sup>225</sup> For this title cf. A at 3.13 and Ach §7, Περί περιφορᾶς, which begins with the position of the earth.

was highlighted by A in the first chapter on the cosmos (A 2.1.9\*), but is left out in the present chapter.

5. On this occasion it is necessary briefly to look at Book I ch. 18 Περί κενοῦ, which bears a close resemblance to the present chapter (as at least one ancient reader noted). It treats the same subject in absolute terms rather than as applied to the cosmos, but in practice there is little difference between the two treatments. Without furnishing a detailed analysis, we can summarize its contents, reconstructed from PST, as follows:<sup>226</sup>

- §1 All Φυσικοί from Thales to Plato: no void
- §2 Empedocles illustrates this doxa: poetic fragment quoted
- §3 Atomists: unlimited atoms in unlimited void
- §4 Strato: no void outside the cosmos, internal void possible
- §5 Zeno and the Stoics: no internal void, infinite external void
- §6 Pythagoreans according to Aristotle: external void for cosmic breathing.

It is a beautifully clear illustration of A's basic diaeretic method. First the two absolute positions are presented in direct opposition (§1 versus §3; §2 as illustration is merely parenthetical). Then the two relative positions in direct opposition are given (§4 versus §5). The final doxa then forms an opposition with the previous view, i.e. finite versus infinite external void, and adds some unusual, even exotic detail.

6. On the basis of the evidence reviewed above there is no reason to suspect that A's chapter contained more material than is found in P, although as always we can never be entirely certain. The chapter is compact and it would appear that P decided to retain it in its entirety. Its structure is not complicated.<sup>227</sup> There is a clear distinction, involving a type A diaeresis, between the positions that there is an external void

<sup>226</sup> The reconstruction of the chapter in its general outline poses little difficulty. S adds only the lemma of Strato to what is found in P (also found in T). The final part of S's long lemma with the name-label Aristotle is drawn from AD, as argued in Vol. I:252–253. One puzzle that remains is why S writes out the Aristotelian lemma before the one on the Stoics. The sequence in P should be retained. The precise wording of the final lemma is difficult because of the incompatibility of the evidence in S and P. See the detailed analysis of Primavesi (forthcoming), who argues convincingly that the words ἐνδοθεν γὰρ εἶναι τόπον πύρινον in G §30 (based on P 1.18) preserve the original reading of P and ultimately A.

<sup>227</sup> Cf. the analysis of Algra (1993) 483, who agrees with an earlier draft of this chapter.

and that there is not. The former has three representatives. The first position, attributed to the Pythagorean succession,<sup>228</sup> does not specify whether the void is unlimited or not. It can be seen as contrasting with the Stoic views in that it posits an extra-cosmic void for the cosmos to inhale and exhale, whereas they posit it for the cosmos to expand to, whether as infinite (the majority view) or finite (Posidonius).<sup>229</sup> The Pythagorean doxa may also be seen as a forerunner of the later views. The other pole of the basic distinction is represented by Plato and Aristotle, who deny the void entirely (this is regarded as mainstream in 1.18).

It must be said that these systematics, though transparent enough, are disappointingly inferior to what is found in the earlier chapter on the void in Book I. We note at least three weaknesses.

(1) The order is reversed, beginning with *pro* instead of *contra*. It is more usual and more logical, if the existence question is asked, to begin with the negative viewpoint; cf. also A at 1.7 (gods), 1.23 (generation and destruction), 1.30 (nature). A may have wished to introduce some variation in his treatment.

(2) Unlike in the previous chapter A does not relate his subject to the question of infinite *kosmoi* versus a single cosmos. It is clear from 1.18 and Ach that this was part of the original treatment.<sup>230</sup> The link to the distinction between the universe and the cosmos made by the Stoic school (cf. 2.1.9\*) is also set aside.

(3) The mention of an internal void in the final lemma is does not cohere with the title, which speaks only of an external void. It too may well be a remnant of a more systematic treatment (cf. the opposition between Strato and the Stoics in 1.18).

On the other hand, there is no real contradiction between the two chapters either. This would be the case if we accepted the reading of P, but this is clearly wrong. The report of Aristotle on the Pythagoreans in 1.18 is consistent with the first lemma in 2.9. The one addition that 2.9 makes is the extra information on a dispute within the Stoic school on whether the extra-cosmic void was infinite or finite. In general scholars have been sceptical about the authenticity of Posidonius' minority view,

<sup>228</sup> On the formula οἱ ἀπὸ see above Part I sect. 7 text after n. 189.

<sup>229</sup> As suggested by Algra (1993) 483, who points out the deliberate opposition between ἀπειρον in § 2 and οὐκ ἀπειρον in § 3.

<sup>230</sup> Algra (1993) 488, who on the basis of the evidence in Ach suggests that there were originally two lemmata on the Epicurus and the Stoics/Posidonius, each involving an opposition, i.e. one cosmos versus an infinite number and infinite versus finite void.



but recently Algra has persuasively argued that it is not implausible if we take into account the Stoic theories on place.<sup>231</sup> For other texts in which the Stoic school is contrasted with the view of one of its members cf. 2.14.1–2\*, 2.25.4–5\*, 2.27.1, 4\* (in the final example not juxtaposed).<sup>232</sup>

7. We should briefly return to the other evidence in Ach and Anon (see sect. 4 above). It is clear that both documents record material that belongs to the same tradition as A and that they use the same diaeretic method. One could speak of a ‘doxographical vulgate’ which is treated in slightly differing ways.<sup>233</sup> Ach formulates the sequence of doxai in such a way that the Stoa represents a midway position between Epicurus and the deniers of the void. The attribution of the view of the limited void to the Stoic school in general conflicts with the Posidonian doxa in A. Algra plausibly suggests that Ach or his source have in fact abridged (and thus garbled) the clearer view that we find in A. The same opposition between Epicurus and the Stoics is found in Anon, with the same mistake in relation to the Stoic position. A further difference between Ach and A is that Ach provides an argument (λόγος) for the position that there is no void, a practice which is very rare in the Aëtian *Placita*.

8. The dialectical-doxographical parallels are of much greater interest than in the preceding two chapters. Most interestingly A himself gives the subject of this chapter as one of the examples of a *quaestio* in the Preface to the work (see text below). Similarly the formulation that we find in the Aratean scholion (Maass 92.34) cited above, εἰ δὲ ἔστι τι κενὸν ἔξωθεν τοῦ οὐρανοῦ, οὐ περίεργος ἡμῖν ἢ ζητησις, is a perfect example of a *quaestio*. We see too in the first Galenic text cited below that the question of the void was a standard example of the kind of subject on which philosophers disagreed (see also the passages in Sextus Empiricus).

The origin of the theme goes back at least to Aristotle. His procedure in discussing the question of the void in *Ph.* IV is a perfect example of the use of the dialectical method in preparation for his own expositi-

<sup>231</sup> See Algra (1993) 495–504 and, in a broader context, (1995) 321–335.

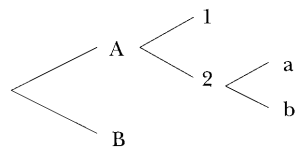
<sup>232</sup> Cf. the differences of opinion recorded by D.L. in the doxography at 7.139, 143, 148, and see further the remarks in Part I sect. 15 text after n. 365.

<sup>233</sup> Cf. Algra (1993) 483–490; on 487 he speaks of a ‘*placita vulgate*’.

tion. For this reason we have included it in our collection, although strictly speaking it illustrates the chapter in Book I better, since the approach is chiefly general and the question of the extra-cosmic void is only raised incidentally, i.e. in the doxa of the Pythagoreans (cf. the Aristotelian–Pythagorean lemmata in both this chapter and 1.18). In *De Caelo*, however, the subject is only very briefly touched on in 1.9, without any reference to other theories or theorists. The four passages in Galen are also of great interest.<sup>234</sup> As we saw, Galen cites the question as belonging to the standard doxographical repertory on which there is continual disagreement. The first passage gives two diaereses (type A), the one between no void and void, the other between an empty void and a void filled with *kosmoi*. The positions of the Peripatos, Stoa and Epicurus can easily be recognized, even though Galen does not use any name-labels. The third passage is similar to A, but clearer, because it adds the question of the plurality of worlds. This time name-labels are included. There is a difference in presentation. Galen strings together his questions, which makes the links and contrasts between them clearer than the more linear sequence in A.<sup>235</sup> But he is not as ambitious as A in trying to distinguish all the various possible positions. After Galen the question is less often raised because of the triumph of the Platonic–Aristotelian worldview. Proclus does not ask εἰ οὐδέν ἐστιν ἔξω, but rather πῶς οὐδέν ἐστιν ἔξω. Only the commentators on Aristotle still discuss the question when it occurs in their text. It is seldom, if ever, alluded to by authors in the Christian tradition.<sup>236</sup>

STRUCTURE (see further above sect. 6)

- A there is an external void
  - 1 for cosmic respiration (= §1)
  - 2 for cosmic expansion through conflagration
    - a infinite (= §2)
    - b not infinite (= §3)
- B there is no external or internal void (= §4)



<sup>234</sup> On these passages see Mansfeld (1992a) 89–92.

<sup>235</sup> But note the combinations of topics on the cosmos as single-limited-multiple-unlimited and as generated-ungenerated-destructible-indestructible recorded in ¶1 and ¶4.

<sup>236</sup> This is not the case for the Jew Philo, because it was still a hot philosophical topic in his day. Nevertheless he manages to theologize it in a number of very interesting passages.

## RECONSTRUCTED TEXT

θ'. Περὶ τοῦ ἐκτὸς τοῦ κόσμου, εἰ ἔστι κενόν<sup>1</sup>

- 1 οἱ μὲν ἀπὸ Πυθαγόρου<sup>2</sup> ἐκτὸς εἶναι τοῦ κόσμου κενόν, εἰς δὲ ἀναπνεῖ ὁ κόσμος καὶ ἔξ οὔ.
- 2 οἱ δὲ Στωικοὶ εἶναι κενόν<sup>3</sup>, εἰς δὲ κατὰ τὴν ἐκπύρωσιν<sup>4</sup> ἀναλύεται<sup>5</sup>, ἄπειρον<sup>6</sup>.
- 3 Ποσειδώνιος οὐκ ἄπειρον<sup>7</sup>, ἀλλ' ὅσον<sup>8</sup> αὐταρκες εἰς τὴν διάλυσιν<sup>9</sup>.
- 4 Πλάτων Ἀριστοτέλης<sup>10</sup> μήτ' ἐκτὸς τοῦ κόσμου μήτ' ἐντὸς μηδὲν εἶναι κενόν<sup>11</sup>.

- 
- 1 PQ (sed vide Daiber), περὶ τοῦ ἐκτός EG
  - 2 οἱ Πυθαγόρου S, (ἀπὸ) add. Wachsmuth, Diels sec.
  - 3 εἶναι κενόν S (et Q?), om. PE
  - 4 τῇ ἐκπύρωσει E, om. Q
  - 5 ἄπειρον E, τὸ ἄπειρον P, ἄπειρος ὢν S, quod emend. Heeren in ἄπειρον ὢν
  - 6 add. ὁ κόσμος S
  - 7 ἔφησε τὸ ἐκτὸς τοῦ κόσμου οὐκ ἄπειρον S
  - 8 καθ' ὅσον conj. Kidd
  - 9 διάβασιν E
  - 10 EQ, ἐν τῷ πρώτῳ Περὶ κενοῦ Ἀριστοτέλης ἔλεγεν εἶναι κενὸν Πλάτων ... P; vide supra
  - 11 P, κενὸν δὲ μὴ εἶναι μήτε ἐκτὸς τοῦ κόσμου μήτε ἐντὸς ἐν τῷ κόσμῳ S, cf. Q

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§ 1–; § 2 *SVF* 2.609; § 3 F84, 97 E.-K., F302 Theiler; § 4a–; § 4b T19 Gigon

g. On what is outside the cosmos, whether a void exists

- 1 Pythagoras and his followers (declare that) a void outside the cosmos exists, into which and from which the cosmos breathes.
- 2 The Stoics (declare that) a void exists, into which the cosmos dissolves in the conflagration, (and which is) infinite.
- 3 Posidonius (declares that it is) not infinite, but to the extent (that is) sufficient for the (cosmos') dissolution.
- 4 Plato and Aristotle (declare that) there is no void either outside the cosmos or inside it.

## DIALECTICAL-DOXOGRAPHIC PARALLELS

**Plato** *Ti.* 32c6–8, ἐκ γὰρ πυρὸς παντὸς ὕδατός τε καὶ ἀέρος καὶ γῆς συνέστησεν αὐτὸν ὁ συνιστάς, μέρος οὐδὲν οὐδενὸς οὐδὲ δύναμιν ἔξωθεν ὑπολιπών; 33c3–4, πνεῦμά τε οὐκ ἦν περιεστὸς δεόμενον ἀναπνοῆς; 58a7, σφίγγει πάντα καὶ κενὴν χώραν οὐδεμίαν ἐὰν λείπεσθαι; 59a1, τοῦ πυρός, ἅτε οὐκ εἰς κενὸν ἐξιόντος. **Aristotle** *Ph.* 4.6 213a12, τὸν αὐτὸν δὲ τρόπον ὑποληπτέον εἶναι τοῦ φυσικοῦ θεωρησῶν καὶ περὶ κενοῦ, εἰ ἔστιν ἢ μή, καὶ πῶς ἔστι, καὶ τί ἐστιν ... ἄρξασθαι δὲ δεῖ τῆς σκέψεως λαβοῦσιν ἅ τε λέγουσιν οἱ φάσκοντες εἶναι καὶ πάλιν ἃ λέγουσιν

οί μὴ φάσκοντες, καὶ τρίτον τὰς κοινὰς περὶ αὐτῶν δόξας. οἱ μὲν οὖν δεικνύναι πειρώμενοι ὅτι οὐκ ἔστιν, οὐχ ὁ βούλονται λέγειν οἱ ἄνθρωποι κενόν, τοῦτ' ἐξ-ελέγχουσιν, ἀλλ' ὁ ἁμαρτάνοντες λέγουσιν. ὥσπερ Ἀναξαγόρας καὶ οἱ τοῦτον τὸν τρόπον ἐλέγχοντες ... οὐκ οὖν τοῦτο δεῖ δεικνύναι, ὅτι ἐστὶ τι ὁ ἀήρ, ἀλλ' ὅτι οὐκ ἔστι διάστημα ἕτερον τῶν σωμάτων, οὔτε χωριστὸν οὔτε ἐνεργεῖα ὄν, ὁ διαλαμβάνει τὸ πᾶν σῶμα ὥστε εἶναι μὴ συνεχές, καθάπερ λέγουσιν Δημόκριτος καὶ Λεύκιππος καὶ ἕτεροι πολλοὶ τῶν φυσιολόγων, ἢ καὶ εἰ τι ἔξω τοῦ παντός σώματος ἔστιν ὄντος συνεχούς. οὗτοι μὲν οὖν οὐ κατὰ θύρας πρὸς τὸ πρόβλημα ἀπαντῶσιν, ἀλλ' οἱ φάσκοντες εἶναι μᾶλλον. λέγουσιν δ' ἐν μὲν ... Μέλισσος μὲν οὖν καὶ δείκνυσιν ὅτι τὸ πᾶν ἀκίνητον ἐκ τούτων ... εἶναι δ' ἔφασαν καὶ οἱ Πυθαγόρειοι κενόν, καὶ ἐπεισείναι αὐτὸ τῷ οὐρανῷ ἐκ τοῦ ἀπείρου πνεύματος ὡς ἀναπνέοντι καὶ τὸ κενόν ... ἐξ ὧν μὲν οὖν οἱ μὲν φασιν εἶναι οἱ δ' οὐ φασι, σχεδὸν τοιαῦτα καὶ τοσαῦτά ἐστιν; 4.7 213b30, πρὸς δὲ τὸ ποτέρως ἔχει δεῖ λαβεῖν τί σημαίνει τοῦνομα ...; 4.8 214b12, ὅτι δ' οὐκ ἔστιν κενόν οὕτω κηχωρισμένον, ὡς ἐνίοι φασι, λέγωμεν πάλιν ... (cf. *Cael.* 1.1 268b11 cited above on ch. 1, 1.9 279a12, 3.6 305a22). **Epicurus** *ap.* D.L. 10.42–44. **Lucretius** 1.1052–1082 (against Stoa). **Cicero** *Ac.* 2.125, sin agis verecundius et me accusas non quod tuis rationibus non adsentiar sed quod nullis, vincam animum cuique adsentiar deligam—quem potissimum? quem? Democritum ... urgebor iam omnium vestrum convicio: 'tunc aut inane quicquam putes esse ... et cum in uno mundo ornatus hic tam sit mirabilis, innumerabiles supra infra, dextra sinistra, ante post, alios dissimiles, alios eiusdem modi mundos esse? ...' **Philo** *Plant.* 7, ἀνάγκη τοίνυν ἐκτός ἢ κενὸν ἢ μηδὲν εἶναι. εἰ μὲν δὴ κενόν ...; cf. *Prov.* 2.53–55, *Her.* 228. **Plutarch** *Adv. Col.* 1114A (against the Epicureans), ὥστε καὶ ὑμῖν ἐν τῷ πᾶν ἔστιν, εἰ μὴ βούλεσθε κεναῖς φωναῖς περὶ κενοῦ χρῆσθαι, σκιαμαχοῦντες πρὸς τοὺς ἀρχαίους; *De Stoic. Repugn.* 1054B–1055C (against Chrysippus). **Aëtius** *ap.* ps.Plu. 1.*Praef.* 52.2 Mau (example of a theoretical question), ζητεῖται ὁμοίως ... εἰ ἔξω τι τοῦ κόσμου ἔστι. **Cleomedes** *Cael.* 1.1.55 Todd, ὅθεν οἱ λέγοντες ἔξω τοῦ κόσμου μηδὲν εἶναι φλυαροῦσιν ...; 1.1.81, Ἀριστοτέλης δὲ καὶ οἱ ἀπὸ τῆς αἰρέσεως οὐδ' ἔξω τοῦ κόσμου κενὸν ἀπολείπουσι ...; 1.1.104, εὐήθες δὲ καὶ τὸ λέγειν αὐτοὺς ὅτι, εἴπερ ἔξω τοῦ κόσμου κενόν ἔστι, τοῦτο ἄπειρον εἶναι δεήσει ... **Galen** *De plac. Hp. et Pl.* 9.6.21, ἐν μὲν γὰρ φιλοσοφία μὴ πεπαῦσθαι τὰς πλείστας τῶν διαφωνιῶν οὐδὲν θαυμαστόν ... ὥσπερ γε καὶ τινῶν μὲν οὐδὲν ἔξωθεν αὐτοῦ (sc. τοῦ κόσμου) περιέχον εἶναι, τινῶν δὲ εἶναι λεγόντων καὶ τούτων αὐτῶν ἐνίων μὲν κενὸν ἀποφνημαζέμενων εἶναι τοῦτο μηδεμίαν οὐσίαν ἔχον ἐν αὐτῷ, τινῶν δὲ κόσμους ἄλλους ἀριθμῷ ἀπεριλήπτους, ὡς εἰς ἄπειρον ἐκτετάσθαι πλήθος; in *Hp. de victu acut.* 1.12 125.9 Helmreich, τῆς μὲν τῶν φιλοσόφων διαφωνίας οὐδὲν ἔχομεν ἐμφανές τεκμήριον· οὔτε γὰρ εἰ γενητός ὁ κόσμος οὐτ' εἰ φθαρτός οὐτ' εἰ μὴ κενόν ἔστιν ἔξωθεν οὐτ' εἰ ἄπειρος οὐτ' εἰ μόνος οὗτος εἰς ἔστιν ...; *De pecc. dign.* 7.8–9 67.7 De Boer (example of the τύφος of the philosophers), καὶ πρῶτόν γε τοῦτο λέγω, μάλιστ' ἐπειδὴ ἡ τῶνδε τῶν Περιπατητικῶν τις ἀφίκεται [τῶν] φιλοσόφων ἓνα τε τὸν κόσμον τοῦτον εἶναι πεπεισμένων ἔξωθεν τ' αὐτοῦ μηδὲν εἶναι κενόν, ὥσπερ οὐδ' ἔνδον. διαφέρει γε μήν, ἔφη, τῶνδε τῶν φιλοσόφων διττὴν διαφορὰν ἐκάτερος τούτων (ἐδείκνυνον δὲ τὸν τε Στωϊκὸν καὶ τὸν Ἐπικουρείον), ὁ μὲν γὰρ Στωϊκὸς οὐκ ἔνδον εἶναι τι κενόν (λέγων), ἔξωθεν δὲ τοῦ κόσμου ὑπάρχειν αὐτό. ταῦτα δ' ἄμφω συγχωρῶν ὁ Ἐπικουρείος ἐν ἄλλῳ τινὶ διαφέρεται πρὸς αὐτούς· οὐ γὰρ (ἓνα) ὁμολογεῖ (τὸν) κόσμον

εἶναι τόνδε, καθάπερ ὁ Στωϊκὸς οἶεται, κατὰ γε τοῦτο τοῖς Περιπατητικοῖς ὁμοδοξῶν, ἀλλ', ὥσπερ γε καὶ τὸ κενὸν ἀπειρον τῷ μεγέθει φησὶν ὑπάρχειν, οὕτω καὶ τοὺς ἐν αὐτῷ κόσμους ἀπειρους τῷ πλήθει. ἐγὼ δ' ἤκουσα μὲν, ἃ λέγουσιν οἱ τρεῖς συναγορεύειν βουλόμενοι τοῖς ἰδίοις ὀνείροις, ἀκριβῶς δ' οἶδα μηδὲνα λόγον ἀποδεικτικὸν ἔχοντας αὐτούς, ἀλλ' ἐνδεχομένους τε καὶ εἰκότας ...; *De plac. propr.* 2 (text Nutton (1987) 38), igitur dico quod non habeo scientiam utrum mundus sit generatus et utrum aliquid sit extra. **Alexander of Aphrodisias** *ap. Simp. in Cael.* 284.30–86.2 (attacking the Stoa); *in Ph.* 671.4; cf. also *Quaest.* 3.12. **Sextus Empiricus** *PH* 2.181, περὶ παντός δὲ δόγματος διαπεφωνήκασιν, ὥστε περὶ πάσης ἀποδείξεως ἀνάγκη εἶναι διαφωνίαν. εἰ γὰρ τῆς ἀποδείξεως τοῦ εἶναι κενὸν λόγου ἔνεκεν ὁμολογουμένης καὶ τὸ εἶναι κενὸν συνομολογεῖται, δῆλον ὅτι οἱ ἀμφισβητοῦντες περὶ τοῦ εἶναι κενὸν καὶ περὶ τῆς ἀποδείξεως αὐτοῦ ἀμφισβητοῦσιν; cf. *Adv. Phys.* 1.333–334, 2.2–5, *Adv. Log.* 2.350. **Themistius** *in Ph.* 67.16 Schenkl, τὸ κενὸν δὲ οἱ φυσικοὶ νομίζουσι. σκεπτέον οὖν, εἴτε ὁρθῶς ὑπολαμβάνουσιν εἴτε μή. **Proclus** *in Ti.* 2.65.14, αὐτὸ δὲ καθ' αὐτὸ σκεπτέον, πῶς οὐδέν ἐστιν ἔξω τοῦ παντός. **Johannes Philoponus** *in APo.* 239.2, ὅταν δὲ πότερον πάντα τὰ ὄντα ἐντὸς αὐτοῦ περιέχει ἢ οὐ, τὸ πρὸς τι (ζητοῦμεν); *in Ph.* 610.24–31. **Simplicius** *in Ph.* 645.29–46.1, 647.12–48.35, esp. 648.11–17, ἐκεῖνοι γὰρ ἔλεγον ἐνεργεῖα τι τοιοῦτον εἶναι διάστημα, ὃ μεταξὺ τῶν σωμάτων ὑπάρχον οὐκ ἔῃ συνεχὴ εἶναι τὰ σώματα, ὥς οἱ περὶ Δημόκριτον καὶ Λεύκιππον ἔλεγον, οὐ μόνον ἐν τῷ κόσμῳ κενὸν εἶναι τι λέγοντες, ἀλλὰ καὶ ἔξω τοῦ κόσμου, ὅπερ δῆλον ὅτι τόπος μὲν οὐκ ἂν εἴη, αὐτὸ δὲ καθ' αὐτὸ ὑφέστηκε. ταύτης δὲ τῆς δόξης γέγονε καὶ Μητροδόωρος ὁ Χῖος, καὶ τῶν Πυθαγορείων τινές, ὥς μετ' ὀλίγον αὐτὸς ἐρεῖ· ὕστερον δὲ καὶ Ἐπίκουρος.

Aëtius *Placita* 2.10

Τίνα δεξιὰ τοῦ κόσμου καὶ τίνα ἀριστερά

WITNESSES

Ps.Plutarch 2.10, Eusebius 15.41, ps.Galen 53, Qusṭā Ibn Lūqā 2.10  
Stobaeus 1.15.6de  
Cf. Achilles 29, 35

ANALYSIS

1. The final chapter posing questions on the cosmos as a whole asks what its left and right regions are. It follows on quite naturally from questions of movement and place, but is nevertheless rather an oddity. We shall discover below how it came to obtain a place in the *Placita*.

2. P records the following two lemmata:

ι'. Τίνα δεξιὰ τοῦ κόσμου καὶ τίνα ἀριστερά

P2.10.1 Πυθαγόρας Πλάτων Ἀριστοτέλης δεξιὰ τοῦ κόσμου τὰ ἀνατολικά  
μέρη, ἀφ' ὧν ἡ ἀρχὴ τῆς κινήσεως, ἀριστερὰ δὲ τὰ δυτικά.

P2.10.2 Ἐμπεδοκλῆς δεξιὰ μὲν τὰ κατὰ τὸν θερινὸν τροπικόν, ἀριστερὰ δὲ  
τὰ κατὰ τὸν χειμερινόν.

There are no significant textual variations in the other witnesses to P. G shortens the title to the first four words and, plainly striving for variation, replaces ἀνατολικά μέρη with τὰ ἑῷα and τὰ δυτικά with τὰ ἑσπέρια.

3. Both of the doxai in P can be located in S's chapter 15 on shapes. The Empedoclean lemma precedes as last in a cluster of three (also 2.9.7\*, 2.10.2\*); the other lemma is cited immediately thereafter:

1.15 title Περί σχημάτων

1.15.6d Ἐμπεδοκλῆς

S1 —καὶ δεξιὰ μὲν αὐτοῦ τὰ κατὰ τὸν θερινὸν τροπικόν, ἀριστερὰ δὲ  
τὰ κατὰ τὸν χειμερινόν.

1.15.6e

S2 Πυθαγόρας, Πλάτων, Ἀριστοτέλης δεξιὰ τοῦ κόσμου τὰ  
ἀνατολικά μέρη, ἀφ' ὧν ἡ ἀρχὴ τῆς κινήσεως [διὰ τὰς ἀνατολάς],  
ἀριστερὰ δὲ τὰ δυτικά. [Ζήνων ἔφασκε τὸ πῦρ κατ' εὐθείαν

κινεῖσθαι.] οὐθ' ὕψος δέ φασιν οὔτε βάθος ἔχειν τὸν κόσμον, καθ' ὃν λόγον ὕψος μὲν λέγεται τὸ κάτωθεν ἄνω διάστημα, βάθος δὲ τὸ ἄνωθεν κάτω. μηδὲν γὰρ εἶναι τῶν οὕτως διαστημάτων λεγομένων περὶ τὸν κόσμον διὰ τὸ περὶ τὸ ἑαυτοῦ μέσον αὐτὸν συνεστάναι, ἀφ' οὗ πρὸς ἅπαν ἐστὶ καὶ πρὸς ὃ πανταχόθεν ταῦτό.

A difficulty arises in that the second lemma, when compared with P, contains quite a lot of additional material. The first additional phrase can be bracketed as a gloss, as has been done since Heeren. The second is a repetition of a doxa found a few lines earlier at 1.15.6a. It is completely out of place here and should also be bracketed.<sup>237</sup> The third addition is more substantial and more problematic. We shall return to it after we have discussed the main contents of the chapter. There is no other material in S that can be suspected to have its origin in A's chapter. We note too that T does not refer to this chapter. Some vaguely parallel material in Ach will be discussed below in sect. 5.

4. It would seem, therefore, that this chapter, just like ¶8, has two doxai which stand in opposition to each other in a straightforward diaeresis. The former, attributed to the authoritative name-labels Pythagoras–Plato–Aristotle,<sup>238</sup> represents the majority view of the standard cosmological model. The latter is an earlier Presocratic view which deviates from it. In the cosmologies of both Aristotle (*De Caelo* 2.2) and the Stoa (Cleomedes *Cael.* 1.1.150–157 Todd) it is assumed that, since the cosmos is a living body in movement, it is legitimate to ascribe directions to it.<sup>239</sup> In the case of the first view the celestial equator is taken as point of departure. The latter view must be related to the vortex model assumed by Empedocles and may be linked to the tilt of the earth recorded in A 2.8.2\*.<sup>240</sup> We would hesitate, however, to call this example a type A diaeresis. As we shall soon see, other contrasting views could have been added.

<sup>237</sup> In Vol. I:251 we hesitated to ascribe this lemma to AD, though its language certainly suggests that source. No place can be found for it in our reconstruction of Book II. Diels *DG* 313 prints it as part of A 1.14, but in a note says it should be added to 1.12.

<sup>238</sup> Only here in Book II, but also found at P 4.20.1, 5.4.2.

<sup>239</sup> For a good general discussion of the problem and Aristotle's views see Moraux (1965) ad loc.

<sup>240</sup> This text has received almost no attention in the learned literature. Bollack (1965–1969) 3.277 argues that Empedocles takes the directions from the viewpoint of the sun as a moving living being, so that when moving from east to west, at the summer solstice it sets closer to the north pole, i.e. on the right, at the winter solstice closer to the south pole, i.e. on the left.

5. There can be little doubt that the origin of the question raised in this chapter is located at Aristotle *De Caelo* 2.2, and esp. 284b6–11. Aristotle states that some speak about a right and a left side of heaven, such as the Pythagoreans. He then proceeds to discuss their theory in a critical vein, followed by his own view (285a11–86a2). The Pythagoreans speak only of left and right and ignore the aspect of above and below (Aristotle does not touch on front and back). He concludes that the northern hemisphere of the cosmos (and earth) is down and to the left, while the southern hemisphere is up and to the right.

Other traditions that differ from Aristotle (and A) are found in two texts in Ach:<sup>241</sup>

text 1: §28 Περί τοῦ ἄξονος, 62.8–12 Maass ~ 44.14–18 Di Maria

οἱ δὲ Πυθαγόρειοι δεξιὰ μὲν τὰ βόρεια, ἀριστερὰ δὲ τὰ νότια καλοῦσιν. Ὅμηρος δεξιὰ μὲν καλεῖ τὰ ἀνατολικά, ἀριστερὰ δὲ τὰ δυτικά διὰ τούτων (*Il.* 12.239–240):

εἴτ' ἐπὶ δεξι' ἴωσι πρὸς ἥῳ τ' ἡέλιόν τε  
εἴτ' ἐπ' ἀριστερὰ τοί γε ποτὶ ζόφον ἡερόεντα.

text 2: §35 Περί θέσεως, 72.13–22 Maass ~ 54.25–55.6 Di Maria

τινὲς δὲ τῶν ἐξηγουμένων βούλονται ἔμπροσθεν μὲν τὰς Ἀρκτους, ὀπίσω δὲ τὸν νότον, δεξιὰ(ς) δὲ τὰς ἀνατολάς, ἀριστερὰ(ν) δὲ τὴν δύσιν ἔχειν, ἴσως ἀπὸ τῶν Ὀμηρικῶν ἐπὶ κινήθენტες (*Il.* 12.239–240):

εἴτ' ἐπὶ δεξι' ἴωσι πρὸς ἥῳ τ' ἡέλιόν τε  
εἴτ' ἐπ' ἀριστερὰ τοί γε ποτὶ ζόφον ἡερόεντά, ...

Here it is the Homeric view, based on two lines from the *Iliad*, that corresponds to the first doxa in A (although he does not cite these lines), whereas the Pythagorean doxa in text 1 agrees with the view given by Aristotle in 285b26. It looks like A has gone against other traditions in lumping together Pythagoras, Plato and Aristotle. As noted above, the correlation of east with right and west with left becomes the standard view in late antiquity. Proclus, commenting on *Ti.* 36c6–8, states that Aristotle agrees with Plato on this point (in *Ti.* 2.258.29), and Calcidius (*Comm.* 93) cites the first Homeric line with the implication that Plato and Homer agree.<sup>242</sup> On the other hand, the Pythagorean

<sup>241</sup> Note that Ach's main concern in these texts is how the model sphere representing the cosmos, which was used in classroom lectures, was held and turned.

<sup>242</sup> The same view is stated by Philoponus *Aet.* 193.19–23 (text below). He too cites



position in Ach's text 1 is taken up by Cleomedes, who can be taken to be representing the Stoic viewpoint,<sup>243</sup> but no name-labels are included in his brief account (see text below). It would seem, therefore, that A missed a chance to juxtapose the Platonic–Aristotelian and Stoic points of view on this question.

6. One problem remains. We have not yet dealt with the problem of the final lines of S2 (= §1 in our reconstruction). In these lines it is argued that there is no height or depth in the cosmos because it is uniformly centered on itself (i.e. on the earth). This is the view emphasized by Plato in *Ti.* 62c3–d4, when arguing against a theory of weight based on movement up and down (i.e. the later view of Aristotle and the Stoa). This question differs from the main topic of the chapter. At most one can say that it introduces a related subject, i.e. even if one argues that there is no up and down in a sphere one can still speak of left and right if the sphere is spinning in a particular fashion. Various positions can be taken on this passage. Diels simply took it as an extension of A's lemma, and he was followed by Wachsmuth. However, the vague way in which the third person plural *φασί* picks up the triple name-label is quite slipshod, as well as being quite wrong in the case of Aristotle. Another possibility is that the passage derives from AD, and has been joined up by S in his usual associative but unsystematic fashion. But whose *doxa* would it be? It cannot come from the sections on Aristotle or the Stoa, so it must refer to Plato. But almost no trace of AD's treatment of Plato survives, so it would quite bold to attribute this passage to him. We note that the additional passage is connected to what precedes with the particle *δέ*, which is usually significant in A (but not in AD). It is just possible that it hints at a remnant of a doxographical *διαφωνία* which A has not accurately preserved in full.<sup>244</sup> One might also argue that S has added the passage from somewhere else; it is clearly relevant to the subject of his chapter. We retain Diels' solution because it is the least risky, but not out of any great conviction.


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the Homeric lines. In the parallel text in *Ph.* 454.14 he adds that by analogy the forward part is north and the back part is south, i.e. the same view as in Ach's text 2.

<sup>243</sup> The text *Cael.* 1.1.155–158 is included by Von Arnim as *SVF* 2.557.

<sup>244</sup> At in *Cat.* 142.27 Kalbfleisch (= *SVF* 2.557) Simplicius preserves a *διαφωνία* between a relative and an absolute conception of the directions of up and down in relation to the cosmos.

STRUCTURE (see above sect. 4)

- |   |   |
|---|---|
| <p>A majority view<br/>right eastern parts, left western parts (= § 1)</p> <p>B minority view<br/>right summer solstice, left winter solstice (= § 2)</p> |  |
|---|---|

RECONSTRUCTED TEXT

ι'. Τίνα δεξιὰ τοῦ κόσμου καὶ τίνα ἀριστερά<sup>1</sup>

- 1 Πυθαγόρας Πλάτων Ἀριστοτέλης δεξιὰ τοῦ κόσμου τὰ ἀνατολικά μέρη, ἀφ' ὧν ἡ ἀρχὴ τῆς κινήσεως<sup>2</sup>, ἀριστερὰ δὲ τὰ δυτικά. οὐθ' ὕψος<sup>3</sup> δέ φασιν οὔτε βάθος ἔχειν τὸν κόσμον, καθ' ὃν λόγον ὕψος μὲν λέγεται τὸ κάτωθεν ἄνω διάστημα, βάθος δὲ τὸ ἄνωθεν κάτω. μηδὲν γὰρ εἶναι τῶν οὕτως διαστημάτων λεγομένων περὶ τὸν κόσμον διὰ τὸ περὶ τὸ ἑαυτοῦ μέσον αὐτὸν συνεστάναι, ἀφ' οὗ πρὸς ἅπαν ἐστι καὶ πρὸς ὃ<sup>4</sup> πανταχόθεν ταυτό<sup>5</sup>.
- 2 Ἐμπεδοκλῆς δεξιὰ μὲν τὰ κατὰ τὸν θερινὸν τροπικόν, ἀριστερὰ δὲ τὰ κατὰ τὸν χειμερινόν.

- 
- 1 καὶ τίνα ἀριστερά om. G
  - 2 διὰ τὰς ἀνατολάς S, secl. Diels
  - 3 οὐθ' ὕψος—πανταχόθεν ταυτό, dubia (vide supra)
  - 4 πρὸς τό S, emend. Diels
  - 5 τοῦτο S, emend. Heeren

§ 1a–; § 1b–; § 1c T19 Gigon; § 2 31A50 DK

10. What are the right (parts) of the cosmos and what are the left

- 1 Pythagoras, Plato and Aristotle (declare that) the right parts of the cosmos are the eastern regions, from which its movement has its origin, while the western regions are its left (parts). But they say that the cosmos has neither height nor depth in the sense that height is said to be the dimension upwards from below and depth is the dimension downwards from above. For, (they say), none of the dimensions understood in this way are relevant to the cosmos because it is established around its own centre, from which there is the same (distance) to every (part) and towards which it is the same from every point.
- 2 Empedocles (declares that) the regions at the summer solstice are the right parts (of the cosmos), while the regions at the winter solstice are the left parts.

## DIALECTICAL-DOXOGRAPHIC PARALLELS

**Aristotle** *Cael.* 2.2 284b6, ἐπειδὴ δέ τινές εἰσιν οἳ φασιν εἶναι τι δεξιὸν καὶ ἀριστερὸν τοῦ οὐρανοῦ, καθάπερ οἱ καλούμενοι Πυθαγόρειοι (ἐκείνων γὰρ οὗτος ὁ λόγος ἐστίν), σκεπτέον πότερον τοῦτον ἔχει τὸν τρόπον ὥς ἐκείνοι λέγουσιν, ἢ μάλλον ἐτέρως ... 285b23–27, δῆλον τοίνυν ὅτι ὁ ἀφανὴς πόλος ἐστὶ τὸ ἄνω. καὶ οἱ μὲν ἐκεῖ οἰκοῦντες ἐν τῷ ἄνω εἰσὶν ἡμισφαιρίῳ καὶ πρὸς τοῖς δεξιοῖς, ἡμεῖς δ' ἐν τῷ κάτω καὶ πρὸς τοῖς ἀριστεροῖς, ἐναντίως ἢ ὥς οἱ Πυθαγόρειοι λέγουσιν ἐκείνοι γὰρ ἡμᾶς ἄνω ποιοῦσι καὶ ἐν τῷ δεξιῷ μέρει, τοὺς δ' ἐκεῖ κάτω καὶ ἐν τῷ ἀριστερῷ. συμβαίνει δὲ τοῦναντίον. **Cleomedes** *Cael.* 1.1.155–158, ἐμπρόσθια μὲν οὖν τὰ πρὸς τῇ δύσει φασὶν εἶναι αὐτοῦ, ἐπειδὴ ὥς ἐπὶ δύσιν ἔχει τὴν ὁρμὴν, ὀπίσθια δὲ τὰ πρὸς τῇ ἀνατολῇ· ἀπὸ τούτων γὰρ ἐπὶ τὰ ἔμπροσθεν πρόεισιν. ὅθεν δεξιὰ μὲν αὐτοῦ τὰ πρὸς ἄρκτον, εὐώνυμα δὲ τὰ πρὸς μεσημβρίαν γενήσεται. **Calcidius** *Comm. in Ti.* 93, quia tamen idem mundus animal est et animal intellegens, dexteras partes habebit profecto eas in quibus est initium motus et ex qua parte perinde ut cetera animalia mouentur primitus. haec porro mundi pars in eo est proptereaue Homerum puto lapsum alitis augurantem dixisse (*Il.* 12.239) ‘dexter ad eum uolitans solemque diemque’. **Proclus** *in Ti.* 2.258.27–59.1, οἶδα μὲν οὖν, ὅτι καὶ ὁ δαμόνιος Ἀριστοτέλης δεξιὸν μὲν τὸ ἀνατολικόν, ἀριστερὸν δὲ καλεῖ τὸ δυτικόν, ἐπειδήπερ ἡ μὲν πρώτη κίνησις ἀπ' ἀνατολῶν ἐστίν, ἡ δὲ μετὰ ταύτην ἀπὸ δυσμῶν, ἀρχὴ δὲ κινήσεως ἐν πᾶσι ζώοις τὸ δεξιόν. καὶ κατ' αὐτό γε τοῦτο συμφωνεῖ πρὸς τὴν τοῦ Πλάτωνος παράδοσιν ... **Johannes Philoponus** *Aet.* 193.19–23, φησὶν ὁ Πλάτων, τὸν μὲν ἐκτὸς ἐπὶ τὰ δεξιὰ ὁ θεὸς ἐκίνησε, τουτέστιν τὴν ἀπλανῆ, τὸν δὲ ἐντὸς ἐπ' ἀριστερά, τὰς πλανωμένας δηλονότι, δεξιὰ μὲν τὰ ἀνατολικά προσαγορεύων Ὀμηρικῶς, ἀριστερά δὲ τὰ δυτικά· φησὶ γοῦν ἀκρίτως “εἴτ' ἐπὶ δεξιὰ ἴωσι πρὸς ἡῶ τ' ἡέλιόν τε | εἴτ' ἐπ' ἀριστερά τοί γε ποτὶ ζόφον ἡερόεντα”; *in Ph.* 454.9–15, καὶ ἐν τῷ παντὶ δὲ δεξιὰ μὲν τὰ ἀνατολικά, ὥς ἄρχοντα τῆς κινήσεως, ἀριστερά δὲ τὰ ἐναντία. οὕτω καὶ ὁ ποιητὴς αὐτὰ καλεῖ· φησὶ γὰρ “εἴτ' ἐπὶ δεξι' ἴωσι πρὸς ἡῶ τ' ἡέλιόν τε, | εἴτ' ἐπ' ἀριστερά τοί γε ποτὶ ζόφον ἡερόεντα.” ταῦτα μὲν οὖν δεξιὰ καὶ ἀριστερά, κατ' ἀναλογίαν δὲ ἔμπροσθεν μὲν τὰ βόρεια, ὀπίσθεν δὲ τὰ νότια. **Simplicius** *in Cael.* 392.5–8 (also cites the Homeric verses).

Aëtius *Placita* 2.11

Περὶ οὐρανοῦ, τίς ἡ τούτου οὐσία

WITNESSES

Ps.Plutarch 2.11, Eusebius 15.42, ps.Galen 54, Qusṭā Ibn Lūqā 2.11

Stobaeus 1.23.1–2

Cf. Achilles 5, *Dox. Pasq.* 22, Philo *Somn.* 1.21, Lactantius *Opif.* 17,

Arnobius *Adv. Nat.* 3.17

ANALYSIS

1. Having completed the chapters on the cosmos as a whole (1–10), A now turns to its loftiest and most eminent part, the heaven, to which only two chapters are devoted before moving on to the stars.<sup>245</sup> This is the first of four chapters in Book II focusing on the οὐσία of parts of the cosmos (also ¶13 stars, ¶20 sun, ¶25 moon). These chapters are crucial in organizing the structure of the remainder of the book. The chapter is remarkable on account of the unusually copious amount of related doxographical material available from outside the narrow Aëtian tradition. This additional material will help us to discover the chapter's rationale, but is of limited use in the task of reconstructing the text, which unfortunately is in a poor state.

2. We start as always with P. There are three lemmata, but the last of these is hopelessly corrupt. We print the text as given by Mau:

ια'. Περὶ οὐρανοῦ, τίς ἡ τούτου οὐσία

P2.11.1 Ἀναξιμένης τὴν περιφορὰν τὴν ἑξωτάτῳ γήινῃ.

P2.11.2 Ἐμπεδοκλῆς στερέμνιον εἶναι τὸν οὐρανὸν ἔξ ἀέρος συμπαγέντος ὑπὸ πυρὸς κρυσταλλοειδῶς, τὸ πυρῶδες καὶ <τὸ> ἀερῶδες ἐν ἑκατέρῳ τῶν ἡμισφαιρίων περιέχοντα.

P2.11.3 Ἀριστοτέλης ἐκ πέμπτου σώματος <...> † πυρὸς ἢ † <...> ἐκ θερμοῦ καὶ ψυχροῦ μίγματος.

We note first that there is some variation in the chapter's title: E and G have the very short Περὶ οὐρανοῦ, while Q seems to be closer to

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<sup>245</sup> On the possibility that another chapter on cosmic distances occurred here see ch. 31 sect. 4.

P in reading *Περὶ οὐρανοῦ οὐσίας*. The first two lemmata in the mss. of P are quite acceptable. In the first E has a striking variant, reading its final part as *τῆς ἔξω ζώνης εἶναι*. This does not give a quality to the heaven and may be connected to the short title without *οὐσία*. The third is not ungrammatical but makes little sense. It is deleted in E, which suggests that the text must have become corrupt very early on (otherwise it would surely have been included). G changes his text to *Ἀριστοτέλης ἐκ πέμπτου σώματος πύρινον εἶναι τὸν οὐρανὸν ἐκ θερμοῦ καὶ ψυχροῦ μίγματος*. This indicates that his text was problematic, but is of no help to us. Q is also of no assistance for trying to restore P's original text. Diels *ad loc.* (cf. *DG* 23) tried to use G to emend the text,<sup>246</sup> and finds justification for including the name-label Anaximander from Achilles, but in this he was mistaken (as we shall see). Mau and Lachenaud rightly obelize, as above.

3. S is this time the more straightforward source. In his brief chapter on the substance and division of the heaven he does little more than join together two chapters from A, refraining from any coalescence and adding almost no extraneous material. For the current chapter five doxai are to be considered:

- |            |  |
|------------|--|
| 1.23 title | <i>Περὶ τῆς οὐρανοῦ οὐσίας καὶ διαιρέσεως</i>  |
| 1.23.1     |  |
| S1         | <i>Ἀναξιμένης καὶ Παρμενίδης τὴν περιφορὰν τὴν ἐξωτάτω τῆς γῆς εἶναι τὸν οὐρανόν.</i>  |
| S2         | <i>Ἐμπεδοκλῆς στερέμνιον εἶναι τὸν οὐρανὸν ἐξ ἀέρος παγέντος ὑπὸ πυρὸς κρυσταλλοειδῶς, τὸ πυρῶδες καὶ τὸ ἀερῶδες ἐν ἐκατέρῳ τῶν ἡμισφαιρίων περιέχοντα.</i>                            |
| S3         | <i>Ἀναξίμανδρος ἐκ θερμοῦ καὶ ψυχροῦ μίγματος.</i>   |
| S4         | <i>Παρμενίδης, Ἡράκλειτος, Στράτων, Ζήνων πύρινον εἶναι τὸν οὐρανόν.</i>   |
| 1.23.2     |  |
| S5         | <i>Ἀριστοτέλης ἐκ πέμπτου σώματος. λέγει γοῦν ἐν τοῖς Περὶ τῆς φυσικῆς ἀκροάσεως καὶ οὐρανοῦ (mss. αὐτοῦ) λόγοις οὕτως· συνεστάναι δὲ τὰ ἄστροα καὶ τὸν οὐρανὸν ἐκ τοῦ αἰθέρος ...</i> |

The first lemma is parallel to P<sub>I</sub>, but it shows signs of Stobean rephrasing. The addition of the name-label Parmenides is unexpected in light of its repetition in S<sub>4</sub>. In the other three *οὐσία* chapters Parmenides is described in each case as regarding the celestial bodies as fiery, so it is

<sup>246</sup> Q may support the proposed change to *πύρινον* (cf. G), but not the suppression of ἢ.

preferable to attach it to S's fourth lemma rather than to the first. It is possible that the first name-label replaces another authentic name, but we can only guess whose name that was. On the other hand, at A 2.7.1\* the words καὶ τὸ περιέχον δὲ πάσας τείχους δίκην στερεὸν ὑπάρχειν, ὅφ' ὃ πυρῶδης στεφάνη or their equivalent in the original source may well have been the source of the present doxa, and could have led to Parmenides representing both a solid and fiery nature, i.e. S<sub>1</sub> and S<sub>4</sub>! But one would surely hesitate to place the same name-label on both sides of the basic διαίρεσις. S may have suspected a problem and converted the doxa into a statement about the location of the heaven—i.e. like an introductory definition—rather than about its earthly nature. It is safest to drop the second name-label.

The second doxa is identical to P<sub>2</sub>. The remaining three doxai are most intriguing when compared to P<sub>3</sub>, because we find that elements of all three are found there, but in reverse order, as can be seen in the following table:

P <sub>3</sub> Ἀριστοτέλης ἐκ πέμπτου σώματος	= S <sub>5</sub>
πυρὸς ἢ	cf. S <sub>4</sub> πύρινον
ἐκ θερμοῦ καὶ ψυχροῦ μίγματος.	= S <sub>3</sub> ἐκ θερμοῦ καὶ ψυχροῦ μίγματος, but including the name-label of Anaximander

We see that the doxa of Anaximander must have originally been present in P, even though the name-label got lost. The preceding words πυρὸς ἢ are very likely a remnant of S<sub>4</sub>. It is likely that P reduced the number of name-labels in this doxa in conformity with his usual practice (cf. Vol. I:192), but there is no way of knowing what he actually did. S<sub>5</sub> is very brief and S follows his frequent practice of adding some more material from AD.<sup>247</sup> The reversal of order, however, is difficult. Diels, as so often, gives precedence to P, despite the problematic nature of the transmitted text. It is certainly common practice for S to postpone a Platonic or Aristotelian lemma and either replace it with or link it to material from elsewhere (cf. Vol. I:248, 265–266).<sup>248</sup> This may have happened here. We are not yet in a position to decide what the original

<sup>247</sup> 201.3–7 is in fact repeated from a longer quote in the previous chapter, 196.5–16. The introductory passage at 201.1–2 is quite unusual. It gives the impression that he is going to cite a passage from the Aristotelian treatises *Ph.* and *Cael.*, but instead we get a summary in *oratio obliqua*. In Vol. I:296 we suggested he may have derived this information from AD as well. On A's quotations and references see further Part I sect. 18.

<sup>248</sup> This also occurs in ¶20 and ¶23.

order in A was. Finally it should be noted that the title of S's chapter is similar to the title suggested by the translation of Q.

4. T unfortunately has skipped over this section of the *Placita*, so the direct sources for A are exhausted. However, we are fortunate to have no less than five texts which cannot go back to A, but are so close that they clearly stem from a parallel tradition.

(1) Achilles has a separate chapter Τίς οὐσία οὐρανοῦ, of which the opening lines are relevant to this chapter:

*Isagoge* 5, 34.25–35.2 Maass ~ 13.16–14.2 Di Maria

- |      |   |
|------|---|
| Ach1 | τὸν δὲ οὐρανὸν οἱ μὲν πυρώδη εἶναι καὶ στερέμνιον, ἐντὸς<br>δὲ αὐτοῦ τοῦ αἰθέρος τὴν σφαῖραν ἐχομένην ὥσπερ δαλόν,<br>διαφέρειν δὲ ταύτῃ, ἣ ὁ μὲν δαλὸς ἀνωφερὲς ἔχει τὸ πῦρ, ὁ δὲ<br>αἰθήρ κατωφερὲς, καὶ τῷ τὸ μὲν θεῖον εἶναι καὶ καθαρόν καὶ<br>ἀμετάληπτον, τὸ δὲ φθαρτόν· |
| Ach2 | Ἐμπεδοκλῆς δὲ κρυσταλλώδη τοῦτον εἶναί φησιν ἐκ τοῦ<br>παγετώδους συλλεγόντα,   |
| Ach3 | Ἀναξίμανδρος δὲ πτηνὸν πυρὸς μετέχοντα,   |
| Ach4 | Ἀριστοτέλης σῶμα ἐκ ψυχροῦ καὶ θερμοῦ.  |

Three of A's name-labels and three of A's doxai recur here, but everything is unbelievably jumbled. The first doxa is rather odd: the heaven is fiery yet solid, while inside ether is found with a downward movement.<sup>249</sup> The term στερέμνιον—not a common word—is precisely that prominently used for Empedocles' doxa in A. The Empedoclean doxa in Achilles is more compactly presented than in A, but is recognizably the same. The name-labels of Aristotle and Anaximander may have been accidentally swapped. The result is similar to the mess in P, but cannot be derived from it, as Diels mistakenly thought. At *DG* 340 he suggests Ζήνων or πέμπτον for the impossible πτήνον. But of A's doxai the one completely missing is the first, so Maass' suggestion γήινον πυρὸς μετέχοντα is to be preferred.<sup>250</sup>

<sup>249</sup> It is perhaps a reflection of the question whether the heaven has depth or possesses a surface only; cf. below A 2.15\* and our analysis *ad loc.* In the Philonic text to be cited below this question immediately follows.

<sup>250</sup> He appositely refers to Thales' doxa in §11, 40.1 that the nature of the stars is to be γήινη ἔμψυκος; cf. A at P 2.15.1. Kranz at 12A17a DK notes the conjecture, but also points to the report at ps.Plu. *Str.* 2 (= 12A10 83.34 DK) that the cosmos developed out of the γόνιμον θερμοῦ τε καὶ ψυχροῦ. It would be rash to derive πτήνον in Ach from γόνιμον, but that there is a link between the passage and both A and Ach is very likely.

(2) Among the *Doxographica Pasquali* there is the following text §22 (200.13–17, scholion to Basil in *Hex.* 1.8 14.12 Amand de Mendieta-Rudberg):

- DP<sub>1</sub> τῶν οὐρανῶν οἱ μὲν πυρώδη τὴν οὐσίαν εἶπον·  
 DP<sub>2</sub> Ἐμπεδοκλῆς δὲ ὕδροπαγῇ καὶ οἶονει κρυσταλλῶδες ἐπέιλημα·  
 DP<sub>3</sub> ἄλλοι δὲ κρᾶμα ἐκ τῶν δ' στοιχείων·  
 DP<sub>4</sub> ἕτεροι δὲ τοῦ ε' στοιχείου· εἰκότως οὖν παραπέμπεται τὴν περὶ οὐσίας σκέψιν ὡς διάφωνον καὶ ἄχρηστον.

The doxographical method and style, with three anonymous plurals and only one name-label, cannot be mistaken. The doxa mentioned first is the dominant one (cf. the four names in S), with Empedocles and the others deviating from it. The term ὕδροπαγῇ is new. It is only found here and must be considered dubious.<sup>251</sup> The third doxa is new. It may have been devised on an analogy with the Platonic view on the οὐσία of the heavenly bodies (cf. A 2.13.12\*). It is also possible that the Aristotelian doxa was accidentally split in two.<sup>252</sup>

(3) Another important text is found at Philo *De Somniis* 1.21, as part of a doxographical passage on the nature of the heavens and the soul. Missed by Diels, it was analysed by Wendland, who demonstrated that it gives a privileged insight into the doxographical tradition in the period before A.<sup>253</sup> Philo argues that both the heavens and the intellect have a nature that is not accessible to human knowledge. In giving examples he draws on material that in the case of the heavens is very close to the cosmology of A's Book II and in the case of the intellect is very close to the psychology of Book IV.<sup>254</sup> For the heavens the following questions are asked:

- A<sub>1</sub> the heaven: what is its nature? (§21, cf. A 2.11\*)  
 A<sub>2</sub> the heaven: is it three- or two-dimensional? (§21, cf. A 2.15\* on the fixed stars)  
 B<sub>1</sub> the stars: what is their nature? (§22, cf. A 2.13\*)

<sup>251</sup> Pasquali (1910) 219 thought it had an authentic ring and that the scholion preserves the original doxa best, but Bollack (1965–1969) 3.245 disagrees. Various other possibilities are ὑδροπαγῇ, ψυχροπαγῇ, κρυμοπαγῇ (cf. *glaciatum* in the Lactantian text cited below).

<sup>252</sup> Cf. the doxa in the Philonic text to be cited below, where we get the doxa if μηδενός is subtracted from πέμπτον κυκλοφορικὸν σῶμα, μηδενὸς τῶν τεττάρων στοιχείων μετέχον.

<sup>253</sup> Cf. Wendland (1897); see further the brief remarks in Vol. I:317–318 and Runia (2008) 24–28.

<sup>254</sup> On the latter material furnished by Philo see Mansfeld (1990a) 317–3121.



- B<sub>2</sub> the stars: are they living or lifeless? (§ 22, cf. A 2.3\* on the cosmos)  
 C<sub>1</sub> the moon: is its light its own or from the sun? (§ 23, cf. A 2.28\*).

A little later he returns to the theme and adds some more examples:

- D<sub>1</sub> the sun: what is its size? (§ 53, cf. A 2.21\*)  
 C<sub>1</sub> the moon: is its light its own or bastard? (§ 53, cf. A 2.28\*)  
 B<sub>1</sub> the stars: what is their nature? (§ 53, cf. A 2.13\*)  
 B<sub>3</sub> the stars: what is their movement? (§ 53, cf. A 2.16\*)  
 B<sub>4</sub> the stars: what is their relation to each other and to the earth? (§ 53, cf. A 2.19\*).

The passage relating to the present chapter reads as follows (*Somn.* 1.21, 3.209.8–12 C-W):

τούτων μὲν δὴ πάντων αἰσθανόμεθα, ὃ δ' οὐρανὸς ἀκατάληπτον ἔχει  
 τὴν φύσιν, οὐδὲν ἑαυτοῦ σαφὲς γνῶρισμα πρὸς ἡμᾶς ἀποστείλας. τί  
 γὰρ ἂν εἴπομεν;

- Ph<sub>1</sub> ὅτι πεπηγὼς ἐστὶ κρύσταλλος, ὥς ἠξίωσάν τινες;  
 Ph<sub>2</sub> ἢ ὅτι πῦρ τὸ καθαρώτατον;  
 Ph<sub>3</sub> ἢ ὅτι πέμπτον κυκλοφορικὸν σῶμα, μηδενὸς τῶν τεττάρων στοιχείων  
 μετέχον;

Philo's approach is sceptical, so his three doxai are questions rather than answers. He omits the name-labels, but the doxai of Empedocles (crystal), Parmenides *et alii* (fire) and Aristotle (fifth element) are clearly recognizable. The sequence given is the same as in S (against P). Philo's descriptions of the last two positions is in fact fuller than in A. This may reflect his source, as assumed by Wendland,<sup>255</sup> or may represent his own additions.

(4) The next text is found in the early 4th cent. Christian writer Lactantius. It is somewhat similar to the Philonic passage in that it too is found in a context where various opinions on the nature of the soul are presented, *Opif.* 17. Lactantius too is sceptical about what we can know about the soul. But he does know what it is not,<sup>256</sup> which leads him to make a remark about our knowledge of the heavens (§ 17.6, 200.25–202.5 Perrin):

haec apertissime falsa sunt. neque enim tam obscuram nobis huiusmodi rerum dico esse rationem, ut ne hoc quidem intellegamus, quid verum esse non possit. an si mihi quispiam dixerit aeneum esse caelum aut uitreum aut,

<sup>255</sup> Wendland (1897) 1075.

<sup>256</sup> As Perrin (1974) 397 notes in his Commentary, the thought goes back to the words of the Academic philosopher Cotta in Cicero *N.D.* 1.57.

ut Empedocles ait, “aerem glaciatum”, statimne adsentiar, quia caelum ex qua materia sit ignorem? sicut enim hoc nescio, ita illud scio.

Three solid substances are given as possible substances of the heaven.<sup>257</sup> Bronze vaguely recalls the first doxa in A, but may also be influenced by the Bible.<sup>258</sup> Glass is closer to the Empedoclean doxa, but then his name-label is used for a third option ‘frozen air’, which is similar to what we find in A and Philo, but not quite the same.

(5) Finally there is another text in the work of Lactantius’ teacher Arnobius, *Adv. Nat.* 3.17, which expresses the same mode of scepticism (175.23–176.3 Marchesi):

ut enim, si vitreus esse dicatur mundus, si argenteus, ferreus vel ex fragili conglobatus et fabricatus testa, non dubitemus falsum esse contendere, quamvis quae sit eius materia nesciamus, ita cum de specie agatur dei ...

The options this time are glass, silver, iron or fine earthenware. Here the doxographical origin of the theme can still be felt, but clearly rhetorical embellishment has taken over.

Two conclusions may be permitted. Firstly, the relation between A and these texts is close enough that all must go back to a common *Grundlage* in the anterior doxographical tradition. Particularly striking is the presence of Empedocles, whose view occurs repeatedly (though the name-label is left out by Philo). Secondly, the parallel passages are disturbed or partial or incomplete. A has gone his own way. Decisive insight into his rationale is not furnished by this copious material.

5. There is no reason to think that the present chapter, with its five doxai, as preserved by S and P, is not complete. This cannot be proven either, but the non-Aëtian parallels do not suggest a vast fund of extra doxai. The challenge, then, is to determine the method and intended structure of the chapter.

It should be noted, first of all, that the subject of the chapter is somewhat unclear. It is not likely that the reader would take οὐρανός to mean the cosmos as a whole (a possible meaning of the term, as Plato makes clear at *Ti.* 28b2) because ch. 1–10 have already dealt with this subject. But there is still ambiguity as to whether it means just the outermost sphere with or without stars (a matter of controversy, as we shall

<sup>257</sup> Note also his text at *Div. Inst.* 3.3.4 (cited in the parallels below), where the *materia* (οὐσία) of the caelum is part of the subjects of philosophy that is beyond human knowledge.

<sup>258</sup> The phrase *caelum aeneum* is found at Deut. 28:23, as noted by Perrin *ad loc.*

see) or the entire heavenly realm. The opening lemma, by speaking of ‘the outermost periphery’, clearly implies the former option, as does the second, which appears to distinguish between the outer shell and what it contains.<sup>259</sup> The remainder of the doxai, however, could easily refer to the heavens as a whole, including the heavenly bodies.

Apart from the description in the Empedoclean doxa, the views given are very short, confined to single words or brief phrases. The possibilities are given (in S’s order) as earthy, solid, mixed, fiery and quintessential. Is this just a sequential list or is it determined by a more basic division? It might be concluded that the first and fourth represent the fundamental διαίρεσις, especially since this division provides the basic clue for the later οὐσία chapters (see the analyses of ¶13, ¶20 and ¶25 below). Yet this conclusion would seem to be premature. How do we fit the Empedoclean doxa, and even more problematically, that of Anaximander into such a diaeresis?

A further problem is the difference in sequence between S and P, where, as we already noted, the positions of Aristotle and Anaximander are reversed. The preference, we believe, must be given to S, even if this means an exception to the rule that P is more reliable for fixing the order of the doxai. There is no problem in having Anaximander at the end as a compromise view. But P has Aristotle precede the fiery doxa, which seems inherently unlikely (cf. what happens to the three other οὐσία chapters). S had a good reason for putting Aristotle last (so he could attach the passage from AD), but no good reason for moving Anaximander up to third place. It is a justifiable assumption that the textual corruption in P is responsible for the discrepancy between our main sources.

6. Further assistance can be sought and gained from the list of dialectical-doxographical parallels. A number of texts indicate that the question of the essential nature of the heaven was a prime topic in cosmology, notably the summary of the subjects of physical investigation given by Posidonius (text below), where it heads a list of no less than seven subjects (cf. also ps.Aristotle, Philostratus etc.). In Plato and Aristotle the distinction between the outermost heaven and the heavenly bodies

<sup>259</sup> On this Empedoclean text see Guthrie (1962–1981) 2.188. We take the hemispheres of air and fire to be concentric. These are also found in the account in ps.Plut. *Str.* 10, as is the solid mass (πάγος) of the air, but the nature of the outermost sphere is not mentioned.

is not clearly made, and no doxographical material is found. In rhetorical and more general texts too the subject is not commonly cited as a theme for a physical *quaestio*. A number of significant texts are found in the Patristic tradition, inspired by biblical verses which speak about the heaven (starting with the στερέωμα in Gen. 1:6). Following the lead of Philo, they all have a pronounced sceptical flavour, at least as far as philosophical views are concerned. For Gregory ‘the οὐσία of the heaven is controversial on account of the variety of doxai held on the subject by philosophers of nature, who differ in accordance with what seems right to each of them’ (text below). Basil devotes two passages to the subject in his Homilies on the biblical creation account. In the former he states that what the Bible says on the subject is sufficient, citing a verse from Isaiah that declares the heaven to be ‘as smoke’, i.e. a tenuous and not a solid substance. In the second text, however, he argues that there has been a great diversity of studies on heaven’s nature and mentions as examples the Platonic and Aristotelian views (though without name-labels). In late antiquity the difference between these two views became the main point of controversy on this subject (see the text of Philoponus cited below).

Basil’s approach is consistent with two earlier texts which provide further valuable clues. The more important of these is the passage with which Seneca starts his book on phenomena in the celestial realm, *Nat.* 2.1.1.<sup>260</sup> Although compactly presented it sheds much light on the structure of the *Placita* as a whole. The *quaestio* on the nature of the heaven is presented as *solidumne sit caelum ac firmae concretaeque materiae an ex subtili tenuique nexum*, i.e. a *diaeresis* between solid and tenuous substance. The same division was found in the Epicurean doxa at D.L. 10.88 on the outer limit of the cosmos, and indeed in the very similar doxa linked to this text found at A 2.7.3\*.<sup>261</sup> Of course, for Epicureans with their multiple *kosmoi*, it is not an either/or situation, since both are possible. A number of other texts in Plutarch, Alexander of Aphrodisias and Simplicius also discuss this question in terms of a distinction between a solid and a tenuous material (see texts below). There can be no doubt that this is the decisive clue for understanding

<sup>260</sup> Not exploited by Diels; valuable observations by Waiblinger (1977) 23–29, who uses the *Placita* to shed light on Seneca, but not vice versa, and focuses mainly on Book III, the part of A which corresponds most to the subject of the *Nat.*

<sup>261</sup> See our discussion of this text above in ch. 7 sect. 5.

the present chapter. It is moreover important to note that the same diaeresis will prove crucial in ¶13 on the nature of the heavenly bodies.

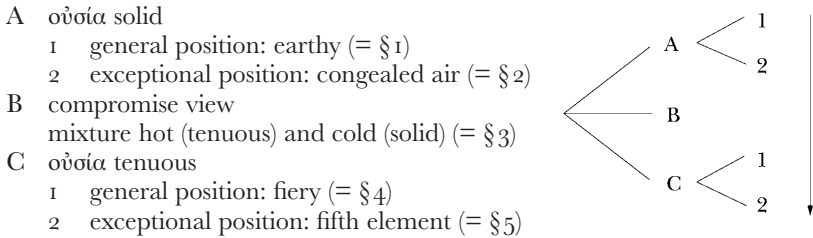
7. The main diaeresis in A is thus between (1) the first two positions, which involve solid material (earthy—cf. the various options in Lactantius and Arnobius—or the more exceptional solidified crystalline air), and (2) the last two which are clearly tenuous (fiery, ethereal fifth element). A similar contrast was found in the mechanistic cosmologies at the beginning of ¶7 on the cosmos' τάξις (cf. ch. 7 sect. 5). In between these two groups there is the *doxa* attributed to Anaximander, which at first might seem not to agree with our analysis very well, but can be explained as a compromise view, if it is recognized that tenuousness is associated in the *Placita* with heat, solidity with cold (cf. the Parmenidean *doxa* on the origin of the sun and the moon at S 1.25.3g = A 2.20.15\*, and also the *doxa* on the tilting of the earth at P 3.12.1). The *doxa* is far too brief for a precise understanding of its contents. It is plausible, however, that it refers to the combination of hot (fire) and cold (mist) that is characteristic of the revolving circles that produce the light of the heavenly bodies (cf. A 2.13.7\*, 2.20.2\*, 2.25.1\*).<sup>262</sup> The placement of this *doxa* in the third position yields a type B diaeresis and so gives the chapter a characteristic symmetry. There also does seem to be a progression from more solid to more ethereal views, so that the five *doxai* move from the most solid to the least solid substance, with the unusual case of the Aristotelian quintessence bringing up the rear. This is indicated by the arrow in the diagram below. It would also be possible to place less emphasis on the diaeresis and see the chapter as moving through the various elements—earth, ice-like air, fire, quintessence—with the middle lemma using a different schema. The weight of the doxographical parallels, however, militates against this view.

8. The structure of our chapter has now been clarified, but it gives pause to think that we needed extraneous material in order to determine it. Admittedly the prominent word στερέμνιον gives a clue. But the basic division between solid and tenuous is not clearly signposted. Has A reduced the doxography so drastically that the clues have fallen

<sup>262</sup> Cf. also our discussion of ps.Plu. *Str.* 2 above in n. 250. Kahn (1960) 57 sees a link between A's *doxa* with this text (and Theophrastus), which is certainly possible. But it should be noted that A's chapter concerns the nature of the celestial sphere (i.e. related to its structure, cf. ¶7), not its genesis.

away? We note, however, that in the other examples from the same tradition it was not clear either. In *Dox. Pasq.* the main antithesis is between fiery and Empedocles' congealed nature. More confusingly, in Ach1 the heaven is πυρώδης *and* στερέμνιος. The alternative is to conclude that the basic diacresis was so well known that the reader was supposed to detect it without difficulty. This is surely presuming a great deal.

STRUCTURE (see above sect. 7)



RECONSTRUCTED TEXT

ια'. Περί οὐρανοῦ, τίς ἡ τούτου οὐσία<sup>1</sup>

- 1 Ἀναξιμένης<sup>2</sup> τὴν περιφορὰν τὴν ἐξωτάτῳ γήινῃ<sup>3</sup>.
- 2 Ἐμπεδοκλῆς στερέμνιον εἶναι τὸν οὐρανὸν ἐξ ἀέρος συμπαγέντος<sup>4</sup>  
 ὑπὸ πυρὸς κρυσταλλοειδῶς, τὸ πυρῶδες καὶ τὸ<sup>5</sup> ἀερῶδες ἐν  
 ἑκατέρῳ τῶν ἡμισφαιρίων περιέχοντα.
- 3 Ἀναξίμανδρος ἐκ θερμοῦ καὶ ψυχροῦ μίγματος.
- 4 Παρμενίδης Ἡράκλειτος Στράτων Ζήνων πύρινον.
- 5 Ἀριστοτέλης ἐκ πέμπτου σώματος<sup>6</sup>.

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- 1 P, περί τῆς οὐρανοῦ οὐσίας SQ, περί οὐρανοῦ EG, cf. Ach τίς οὐσία οὐρανοῦ
  - 2 Ἀναξιμένης καὶ Παρμενίδης S
  - 3 P, γῆν εἶναι G, τῆς γῆς εἶναι S, τῆς ἔξω ζώνης εἶναι E, 'daß die Substanz des Himmels dampfartig und außerhalb von ihm (dem Himmel) verlaufende Bewegung an seiner äußersten Grenze ist' Q, γῆς εἶναι conj. Diels ex G et S
  - 4 συμπαγέντα Q ut vid.
  - 5 τό om. PE, rest. Diels Mau
  - 6 textus lemmatum 3-5 in P non sanus; vide supra

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§1 13A13 DK, cf. 28A38; §2 31A51 DK; §3 12A17a DK; §4a 28A38 DK; §4b 22A10 DK; §4c fr. 84 Wehrli; §4d *SVF* 1.116; §5 T19 Gigon

## 11. On the heaven, what is its substance

- 1 Anaximenes (declares that) the outermost periphery is earthy.
- 2 Empedocles (declares that) the heaven is solid, consisting of air that has been compacted together by fire in crystalline fashion, (and) containing the fiery (element) and the airy (element) in each of the hemispheres.
- 3 Anaximander (declares that the heaven consists) of a hot and a cold mixture.
- 4 Parmenides, Heraclitus, Strato and Zeno (declare that the heaven is) fiery.
- 5 Aristotle (declares that the heaven consists) of a fifth body.

## DIALECTICAL-DOXOGRAPHIC PARALLELS

**Aristotle** *Cael.* 3.1 298a24–26, περὶ μὲν οὖν τοῦ πρώτου οὐρανοῦ καὶ τῶν μερῶν, ἔτι δὲ περὶ τῶν ἐν αὐτῷ φερομένων ἄστρον, ἐκ τίνων τε συνεστᾶσι καὶ ποῖ' ἅττα τὴν φύσιν ἐστί, πρὸς δὲ τούτοις ὅτι ἀγένητα καὶ ἀφθαρτα, διεληλύθαμεν πρότερον. **Epicurus** *ap.* D.L. 10.88, cited in ch. 7 sect. 5. **Posidonius** fr. F18 E.-K. (= *Simp. in Ph.* 291.26), τῆς μὲν φυσικῆς θεωρίας ἐστὶ τὸ σκοπεῖν περὶ τε οὐσίας οὐρανοῦ καὶ ἄστρον καὶ δυνάμεως καὶ ποιότητος γενέσεώς τε καὶ φθορᾶς καὶ νῆ Δία τούτων περὶ μεγέθους καὶ σχήματος καὶ τάξεως ἀποδεικνύναι δύναται· ἡ δὲ ἀστρολογία περὶ τοιούτου μὲν οὐδενὸς ἐπιχειρεῖ λέγειν, ἀποδείκνυσσι δὲ τὴν τάξιν τῶν οὐρανίων κόσμον ὄντως ἀποφήνασα τὸν οὐρανόν, περὶ τε σχημάτων λέγει καὶ μεγεθῶν καὶ ἀποστημάτων γῆς τε καὶ ἡλίου καὶ σελήνης καὶ περὶ ἐκλείψεων καὶ συνάψεων τῶν ἄστρον καὶ περὶ τῆς ἐν ταῖς φοραῖς αὐτῶν ποιότητος καὶ ποσότητος. **Ps.Aristotle** *De mundo* 2 392a6, οὐρανοῦ δὲ καὶ ἄστρον οὐσίαν μὲν αἰθέρα καλοῦμεν, οὐχ, ὥς τινες, διὰ τὸ πυρῶδη οὔσαν αἰθεσθαι, πλημμελοῦντες περὶ τὴν πλείστην πυρὸς ἀπηλλαγμένην δύναμιν, ἀλλὰ διὰ τὸ αἰεὶ θεῖν κυκλοφοροῦμένην, στοιχεῖον οὔσαν ἕτερον τῶν τεττάρων, ἀκήρατόν τε καὶ θεῖον. **Philo** *Somn.* 1.21–23, 53, see above sect. 4(3). **Seneca** *Nat.* 2.1.1, omnis de universo quaestio in caelestia, sublimia, terrena dividitur. prima pars naturam siderum scrutatur et magnitudinem et formam ignium, quibus mundus includitur, solidumne sit caelum ac firmæ concretæque materiae an ex subtili tenuique nexum, agatur an agat, et infra sese sidera habeat an in contextu sui fixa, quemadmodum anni vices servet, solem retro flectat, cetera deinceps his similia ... **Plutarch** *De facie* 928D, τί γὰρ οὕτως λάβωμεν ἐξ ὧν ἐκεῖνοι (Στωϊκοί) λέγουσι τὸ εἶκός; λέγουσί γε τοῦ αἰθέρος τὸ μὲν ἀνγοειδὲς καὶ λεπτόν ὑπὸ μανότητος οὐρανὸν γεγονέναι τὸ δὲ πυκνωθὲν καὶ συνειληθὲν ἄστρο, τούτων δὲ τὸ νοθρότατον εἶναι τὴν σελήνην καὶ θολερώτατον (cf. also 934B). **Alexander of Aphrodisias** *ap.* *Simp. in Cael.* 436.4, ἀπορεῖ δὲ καλῶς ὁ Ἀλέξανδρος, πῶς ἀπλῆς οὐσης τῆς πέμπτης λεγομένης οὐσίας τοῦ κυκλοφορητικοῦ σώματος τοσαύτη φαίνεται διαφορὰ τοῦ τῶν ἄστρον σώματος πρὸς τὸ οὐράνιον· εἰ δὲ διαφέρει ὅλως πυκνότερες ἢ μανότερες ἢ κατὰ χρώματα ἢ κατὰ τινα ἄλλα τοιαῦτα εἶδη, πῶς ἀπλᾶ λέγεται ... **Flavius Philostratus** *Ep.* 56, καὶ περὶ τὰ κάλλιστα ἐσπουδάκει φιλοσοφοῦσα, καὶ ἦν αὐτῆς ὁ ἔρως τὰ οὐρανοῦ νῶτα ὁρᾶν καὶ περὶ τῆς κατὰ ταῦτα οὐσίας πολυπραγμονεῖν ... **Arnobius** *Adv. nat.* 3.17, see above sect. 4(5). **Lactantius** *De opif. Dei* 17.6, see above sect.

4(4); *Div. Inst.* 3.3.4, nam causas naturalium rerum disquirere aut scire velle ... caelum ipsum qua magnitudine, qua materia constet, utrum quietum sit et immobile an incredibili celeritate volvatur ... **Basil** in *Hex.* 1.8 14.19 Amand de Mendieta–Rudberg, ἀλλὰ περὶ μὲν τῆς οὐσίας τοῦ οὐρανοῦ ἀρκοῦμεθα τοῖς παρὰ τοῦ Ἡσαίου εἰρημένους· ὃς ἐν ιδιωτικοῖς ῥήμασιν ἱκανὴν ἡμῖν τῆς φύσεως αὐτοῦ τὴν διάνοιαν ἐνεποίησεν, εἰπὼν· ὁ στερεώσας τὸν οὐρανὸν ὥσει καπνόν (Is. 40:22)· τουτέστι, λεπτὴν φύσιν καὶ οὐ στερεάν οὐδὲ παχεῖαν εἰς τὴν τοῦ οὐρανοῦ σύστασιν οὐσιώσας; 1.11 18.12, τὰ αὐτὰ δὲ ταῦτα καὶ περὶ οὐρανοῦ εἵπομεν, ὅτι πολυφωνότατοι πραγματεῖται τοῖς σοφοῖς τοῦ κόσμου περὶ τῆς οὐρανοῦ φύσεως καταβέβληνται. καὶ οἱ μὲν σύνθετον αὐτὸν ἐκ τῶν τεσσάρων στοιχείων εἰρήκασιν, ὡς ἅπτον ὄντα καὶ ὁρατὸν, καὶ μετέχοντα γῆς μὲν διὰ τὴν ἀντιτυπίαν, πυρὸς δὲ, διὰ τὸ καθορᾶσθαι, τῶν δὲ λοιπῶν, διὰ τὴν μίξιν. οἱ δὲ τοῦτον ὡς ἀπίθανον παρωσάμενοι τὸν λόγον, πέμπτην τινὰ σώματος φύσιν εἰς οὐρανοῦ σύστασιν οἰκοθεν καὶ παρ' ἐαυτῶν ἀποσχεδιάσαντες ἐπεισήγαγον. καὶ ἔστι τι παρ' αὐτοῖς τὸ αἰθέριον σῶμα ...; 3.4 44.17 (firmament in Gen. 1:6 not congealed or crystalline ice). **Gregory of Nyssa** *C. Eun.* 1.435, ζητείσθω δὲ καθ' ὑπόθεσιν τούτων ἑνὸς ἢ οὐσίας, καὶ ἔστω οὐρανὸς τῇ θεωρίᾳ τοῦ λόγου προκείμενος. ἀμφιβαλλομένης τοίνυν τοῦ οὐρανοῦ τῆς οὐσίας διὰ τὰς ποικίλας ἐπὶ τούτῳ δόξας τῶν διαφόρων κατὰ τὸ φανέν ἐκάστω περὶ αὐτοῦ φυσιολογούντων. **Ambrose** *Exam.* 1.6.21–24 (based on Basil). **Johannes Philoponus** in *APo.* 238.26, εἰ γὰρ αἱ ἀποδείξεις τὰ ὑπάρχοντα τοῖς πράγμασιν ἀποδεικνύουσι, τοῦτο δ' ἐστὶν ἢ τὸ τί ἐστὶ τῶν πραγμάτων, λέγω δὴ τοὺς ὁρισμούς, ἢ τὸ ποιὸν τῶν οὐσιῶν ἢ τὸ ποσὸν ἢ τινὰ τῶν ἄλλων κατηγοριῶν (οἷον ὅταν μὲν ζητῶμεν, εἰ τύχοι, περὶ οὐρανοῦ, πότερον ἐκ τῶν τεσσάρων στοιχείων συνέστηκεν ἢ ἑτέρας τινός ἐστιν οὐσίας, τὸ τί ἐστὶν αὐτοῦ ζητοῦμεν ...). **Simplicius** in *Cael.* 11.1 435.20–36.3, 437.19–22, οὕτως οὖν καὶ τὸ ἐν οὐρανῷ πυκνόν, εἰ τύχοι, καὶ τὸ ἐνταῦθα μανὸν οὔτε μάχεται πρὸς ἄλληλα οὔτε μεταβάλλει εἰς ἄλληλα διὰ τὸ μὴ πεφυκέναι ἐν τῷ αὐτῷ γίνεσθαι ὑποκειμένῳ ἀλλόφυλα ὄντα. ἀλλ' οὐδὲ τὸ ἐν τῷ οὐρανῷ πυκνὸν πρὸς τὸ ἐκεῖ μανὸν μάχεται ...



Aëtius *Placita* 2.12

Περὶ διαιρέσεως οὐρανοῦ, εἰς πόσους κύκλους διαιρεῖται

WITNESSES

Ps.Plutarch 2.12, ps.Galen 55, Qusṭā Ibn Lūqā 2.12

Stobaeus 1.23.3

Cf. Achilles 29

ANALYSIS

1. The only further chapter that A devotes to the heaven on its own before moving on to the heavenly bodies that populate it is a treatment of the question of how many celestial circles it is divided into. The use of the term πόσος in the title indicates a question in the category of quantity, cf. whether there is one cosmos or infinite *kosmoi* as dealt with in ¶1. There is a parallel chapter for the earth at P 3.14, Περὶ διαιρέσεως γῆς, πόσαι εἰσι ζῶναι αὐτῆς, where the quantitative aspect recalls the title of the first chapter on the earth, P 3.9, Περὶ γῆς καὶ τίς ἡ αὐτῆς οὐσία καὶ ποσαί. If the ambiguity of the term οὐρανός is taken into account, the parallelism between 2.1 + 11 & 2.12 and 3.9 & 3.14 is neat and deliberate.

2. P records two doxai for this chapter as follows:

ιβ'. Περὶ διαιρέσεως οὐρανοῦ, εἰς πόσους κύκλους διαιρεῖται

P2.12.1 Θαλῆς Πυθαγόρας οἱ ἀπ' αὐτοῦ μεμερίσθαι τὴν τοῦ παντὸς οὐρανοῦ σφαῖραν εἰς κύκλους πέντε, οὓσιν αὖτε προσαγορεύουσι ζώνας· καλεῖται δ' αὐτῶν ὁ μὲν ἀρκτικός τε καὶ ἀειφανής, ὁ δὲ θερινὸς τροπικός, ὁ δ' ἱσημερινός, ὁ δὲ χειμερινὸς τροπικός, ὁ δ' ἀνταρκτικός τε καὶ ἀφανής· λοξὸς δὲ τοῖς τρισὶ μέσοις ὁ καλούμενος ζωδιακὸς ὑποβέβληται, παρεπιψάτων τῶν μέσων τριῶν· πάντας δ' αὐτοὺς ὁ μεσημβρινὸς πρὸς ὀρθὰς ἀπὸ τῶν ἄρκτων ἐπὶ τὸ ἀντίξουν τέμνει.

P2.12.2 Πυθαγόρας πρῶτος ἐπινενοηκέναι λέγεται τὴν λόξωσιν τοῦ ζωδιακοῦ κύκλου, ἦντινα Οἰνοπίδης ὁ Χίος ὡς ἰδίαν ἐπίνοιαν σφετερίζεται.

The text is somewhat disturbed in the various mss. of P, but can be taken as reliable as printed in Mau. The subsidiary witnesses contribute

little further. E does not include this chapter. G retains both doxai, abbreviating only the former. He also shortens the chapter's title, in which he is supported by Q.

3. The text recorded by S is virtually identical to that found in P. He combines it with the previous chapter in A, but refrains from coalescence or supplementation. As is to be expected, there are a small number of verbal differences (*italicized in the text below*).

1.23 title    *Περὶ τῆς οὐρανοῦ οὐσίας καὶ διαιρέσεως*

1.23.3

S1            *Θαλῆς Πυθαγόρας καὶ οἱ ἀπ' αὐτοῦ μεμερίσθαι τὴν τοῦ παντὸς οὐρανοῦ σφαῖραν εἰς κύκλους πέντε, οὓσιν αὖτε προσαγορεύουσι ζώνας· καλεῖται δ' αὐτῶν ὁ μὲν ἀρκτικός τε καὶ ἀειφανής, ὁ δὲ θερινὸς τροπικός, ὁ δὲ ἰσημερινός, ὁ δὲ χειμερινὸς τροπικός, ὁ δ' ἀνταρκτικός τε καὶ ἀφανής· λοξὸς δὲ ἐν τοῖς τρισὶ μέσοις ὁ καλούμενος ζωδιακὸς ὑποκέκληται, παραψαύων τῶν μέσων τριῶν. πάντας δ' αὐτοὺς ὁ μεσημβρινὸς πρὸς ὀρθὰς ἀπὸ τῶν ἄρκτων ἐπὶ τὸ ἀντίκρου τέμνει.*

S2            Πυθαγόρας πρῶτος ἐπινοοῦναι λέγεται τὴν λόξωσιν τοῦ ζωδιακοῦ κύκλου· ἦντινα Οἰνοπίδης ὁ Χῖος ἐπίνοιαν ὡς ἰδίαν σφετερίζειται.

The differences are trivial. The combination of καλούμενος and ὑποκέκληται does seem suspicious. We have a choice between following Heeren's brilliant emendation ὑπεκέκληται or conforming the text to P as done by Diels and Wachsmuth. In both cases ἐν becomes otiose.

4. Since the chapter records no dispute, it is predictable that T shows no interest. Brief mention should be made of the parallel chapter in Achilles, §29 entitled *Περὶ ζωνῶν, καὶ ὅτι πέντε*. We cite only a few lines:

*Isagoge* 29, 62.18–20, 64.24–25, Maass ~ 45.2–5, 47.1–2 Di Maria

*περὶ δὲ τῶν ζωνῶν Ἄρατος ἐν τοῖς Φαινομένοις οὐκ ἐμνήσθη, ἄλλοι δέ, ὧν καὶ Ἐρατοσθένης, ἐμνημόνευσαν· ζῶναι τοῖνυν λέγονται ...*

*τινὲς δὲ καὶ ταῦτα περὶ τῶν ζωνῶν εἰρήκασιν. ζωναὶ εἰς τῆς γῆς ὑπὸ τοὺς παραλλήλους ὁμοίως πέντε ...*

Not only is the title quite different (and using a different terminology), but the contents of the chapter, largely based on Eratosthenes, bear no relation to the *Placita* and the method it typically uses.

5. Since P and S are identical and there is no further evidence, the reconstruction of the chapter is not in dispute, except that a decision has to be made on the title. We retain P's longer title, which is paralleled at P 3.14, but here the choice is basically arbitrary, since it is obvious that the two traditions have equal validity.<sup>263</sup> There are only two doxai. The former gives a longish description of the five cosmic zones and their relation to the axial tilt. The attribution to Thales, Pythagoras and his successors means that both the Ionic and the Italian line of philosophers are represented.<sup>264</sup> The second doxa picks up the mention of the zodiacal tilt and makes an additional comment about Pythagoras as its *πρῶτος εὐρέτης* and the alleged plagiarism of the early fifth-century astronomer Oenipides of Chios.<sup>265</sup> We have encountered this motif earlier at A 2.1.1\*; see our remarks in ch. 1 sect. 8 and nn. 35–36.

The chapter is unique in Book II on account of its purely descriptive character. No attempt is made to formulate any kind of diaeresis. It is intriguing to observe that the parallel chapter P 3.14 also has only one doxa, in which Pythagoras (alone) is reported to have divided the earth into five zones *ἀναλόγως τῇ τοῦ παντός σφαίρᾳ*. But there, unfortunately, Stobaeus is missing, so we cannot check its completeness.<sup>266</sup>

6. As we already noted above in our analysis of ¶8 (see sect. 5), in the standard Platonic-Aristotelian cosmological model an analogy was envisaged between the structure of the cosmos and the earth, with the former being divided into five circles and the latter into five zones.<sup>267</sup> In the *Placita* this has resulted in two chapters, one on the cosmos and one on the earth. A's formulation of the five circles shows a strong resemblance to brief reports elsewhere, whether doxographical (esp. the Stoic report in D.L.) or arithmological (cf. Plutarch, Anatolius,

<sup>263</sup> On the variation in the traditions of P and A of longer and shorter titles see above Part I sect. 17, where we postulate that 'the length and precise wording of chapter headings were not a matter of rigorous discipline, but rather of convenience' (p. 197).

<sup>264</sup> As noted in Part I sect. 7 text above n. 190.

<sup>265</sup> This example appears to have escaped the notice of the two most extensive treatments of ancient accusations of plagiarism: Stempler (1912), Ziegler (1950).

<sup>266</sup> Other purely descriptive chapters are P 3.6 on rods, 3.18 on the halo. But both these chapters do not have name-labels. On these chapters see now Mansfeld (2005a) 25 and *passim*.

<sup>267</sup> As the text at Plu. *De def. orac.* 429F shows, it was customary to speak of circles of the heaven and zones of the earth. A makes the distinction in his two titles, here and at P 3.14. But as the first doxa indicates, this was not adhered to strictly.

Ps.Iamblichus). Obviously it uses standard terminology.<sup>268</sup> The chapter in Ach has already been cited. More interesting from the doxographical point of view is his section on the terrestrial zones (§ 31, 67.27–35 Maass ~ 50.1–7 Di Maria):

πρῶτος δὲ Παρμενίδης ὁ Ἑλεάτης τὸν περὶ τῶν ζωνῶν ἐκίνησε λόγον. περὶ δὲ τοῦ ἀριθμοῦ αὐτῶν πολλὴ διαφωνία τοῖς μετ' αὐτὸν γέγονεν· οἱ μὲν γὰρ ἕξ αὐτάς εἶπον ὡς Πολύβιος καὶ Ποσειδώνιος τὴν διακεκαυμένην εἰς δύο διαιροῦντες, οἱ δὲ πέντε παρέλαβον, ὥσπερ Ἑρατοσθένης καὶ ἄλλοι πολλοί, οἷς καὶ ἡμεῖς κατακολουθήσαμεν. περὶ δὲ οἰκίσεων πάλιν καὶ τῶν ἐνοικούντων καὶ ὀνομάτων γέγονε πολλὴ ταραχὴ καὶ περὶ ἀντιχθόνων καὶ ἀντιπόδων.

Here we have the usual language of division of opinion (διαφωνία, ταραχή), but exceptionally Ach himself here takes a stand. On Parmenides as πρῶτος εὐρέτης of the (earthly) zones we should also compare the view of Posidonius recorded at Strabo 2.2.2 (= F49 E.-K., text below). At P 3.11.4 A has a similar text: Parmenides is named as the first to declare that the habitable zones of the earth were bounded by the tropics (note that this lemma too has the final position). But here the doxa on the zones themselves is reserved for Pythagoras and before him Thales. On the number of zones there is a discrepancy between A and Ach. The former does not record the difference of opinion, the latter does record it and sides with the Posidonian position. As Kidd points out,<sup>269</sup> this does not encourage one to take the *Placita* as pure Posidonian ἀρέσκοντα.

7. As noted above, the comment in the second lemma is not presented in the form of a διαίρεσις, even though this would not have been difficult to do. In an important parallel text Theon Smyrnaeus states that Eudemus in his account of Greek astronomy recounts that Oenipides was the discoverer of the obliquity of the zodiac, i.e. without the claim of plagiarism (same report also in Didorus Siculus, texts below). As Burkert reminds us,<sup>270</sup> Eudemus is our best authority for early Greek science. Theon's statement goes back to an authority older than A, who himself does not give an authority. The conclusion is hard to avoid that the tradition has been reworked in favour of the older and more venerable founder of the school. It is an example of the marked tendency in

<sup>268</sup> The correspondence with the Stoic doxography at D.L. 7.155 is particularly striking; note esp. ἀρχαῖον αἰεὶ φαινόμενον and ἀνταρχαῖον ἀφανῆ (text below).

<sup>269</sup> Kidd (1988) 233.

<sup>270</sup> Burkert (1972) 306. On the role of Eudemus and his relation to the *Placita* see further our comments at ch. 15 sect. 7, ch. 31 sect. 6.

the *Placita* to upgrade the role of Pythagoras, no doubt linked to the renascence of Pythagoreanism at the end of the Hellenistic period.<sup>271</sup> At A 2.32.6\*, however, the name of Pythagoras follows that of Oenopides for a view of the length of the Great year. The process of upgrading has thus not been consistently carried out.

STRUCTURE (see above sect. 5)

- A mainstream view (= §1)  
 AI additional comment  
 Pythagoras, not Oenopides, discovered tilt (= §2)
- 

#### RECONSTRUCTED TEXT

ιβ'. Περὶ διατρέσεως οὐρανοῦ, εἰς πόσους κύκλους διαίρεται<sup>1</sup>

- 1 Θαλῆς Πυθαγόρας<sup>2</sup> οἱ ἀπ' αὐτοῦ μεμερίσθαι τὴν τοῦ παντός οὐρανοῦ σφαῖραν εἰς κύκλους πέντε, οὓσιν ας προσαγορεύουσι ζώνας· καλεῖται δ' αὐτῶν ὁ μὲν ἄρκτικός τε καὶ ἀειφανής, ὁ δὲ θερινὸς τροπικός, ὁ δ' ἱσημερινός, ὁ δὲ χειμερινὸς τροπικός, ὁ δ' ἀνταρκτικός τε καὶ ἀφανής· λοξὸς δὲ τοῖς τρισὶ μέσοις ὁ καλούμενος ζωδιακὸς ὑποβέβληται<sup>3</sup>, παρεπιψαύων<sup>4</sup> τῶν μέσων τριῶν· πάντας δ' αὐτοὺς ὁ μεσημβρινὸς πρὸς ὀρθὰς ἀπὸ τῶν ἄρκτων ἐπὶ τὸ ἀντίξουν<sup>5</sup> τέμνει.
- 2 Πυθαγόρας<sup>6</sup> πρῶτος ἐπινενοηκέναι λέγεται τὴν λόξωσιν τοῦ ζωδιακοῦ κύκλου, ἣν τινα Οἰνοπίδης ὁ Χῖος ὡς ἰδίαν ἐπίνοιαν<sup>7</sup> σφετερίζεται.

1 Περὶ διατρέσεως οὐρανοῦ GQ, cf. S

2 καί add. S

3 ἐν τοῖς μέσοις ... ὑποκέκληται S, ὑπεκέκληται conj. Heeren, ἐν del. Heeren Diels

4 παρεψαύων S

5 ἀντιγύ S

6 δέ add. G

7 ἐπίνοιαν ὡς ἰδίαν S, ὡς ἐπίνοιαν ἰδίαν G

§1a 11A13c DK; §1b–; §2a–; §2b 41.7 DK

<sup>271</sup> Cf. also A 2.10.1, 2.23.1; on the renascence of Pythagoreanism in the Imperial age see now Bonazzi-Lévy-Steel (2007). Zhmud (2006) 261 argues that the accusation of plagiarism ‘is more likely to go back to the Hellenic tradition’.

12. On the division of heaven, into how many circles is it divided

- 1 Thales, Pythagoras and his followers (declare that) the sphere of the entire heaven has been divided into five circles, to which they give the name 'zones'. Of these (the first) is called 'the arctic and always appearing', (the second) 'the summer tropic', (the third) 'the equatorial', (the fourth) 'the winter tropic', and (the last) 'the antarctic and invisible'. In relation to the three middle (circles), the so-called zodiac (circle) has been placed diagonally, touching the three middle (circles). But the meridian cuts all of them at right angles from the arctic (regions) to its opposite.
- 2 Pythagoras is said to have been the first to have recognized the tilting of the zodiac circle, which Oenopides of Chios appropriates as his own idea.

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Stoics** *ap.* D.L. 7.155, ἀρέσκει δ' αὐτοῖς καὶ τὴν διακόσμησιν ὧδε ἔχειν ... κύκλους δ' εἶναι ἐν τῷ οὐρανῷ πέντε, ὧν πρῶτον ἀρκτικὸν αἰεὶ φαινόμενον, δευτέρων τροπικὸν θερινόν, τρίτον ἱσημερινόν, τέταρτον χειμερινόν τροπικόν, πέμπτον ἀνταρκτικὸν ἀφανῆ. **Diodorus Siculus** 1.98.2–3, Πυθαγόραν τε τὰ κατὰ τὸν ἱερὸν λόγον καὶ τὰ κατὰ γεωμετρίαν θεωρήματα ... μαθεῖν παρ' Αἰγυπτίων ... τὸν τε Οἰνοπίδην ὁμοίως συνδιατρίψαντα τοῖς ἱερεῦσι καὶ ἀστρολόγοις μαθεῖν ἄλλα τε καὶ μάλιστα τὸν ἡλιακὸν κύκλον ὡς λοξὴν μὲν ἔχει τὴν πορείαν, ἐναντίαν δὲ τοῖς ἄλλοις ἄστροις τὴν φορὰν ποιεῖται. **Strabo** 2.2.2, φησὶ δὴ ὁ Ποσειδώνιος τῆς εἰς πέντε ζώνας διαιρέσεως ἀρχηγὸν γενέσθαι Παρμενίδην· ἀλλ' ἐκείνον μὲν σχεδὸν τι διπλασίαν ἀποφαίνειν τὸ πλάτος τὴν διακεκαυμένην ὑπερπίπτουσαν ἐκατέρων τῶν τροπικῶν εἰς τὸ ἐκτὸς καὶ πρὸς ταῖς εὐκράτοις· Ἀριστοτέλει δὲ αὐτὴν καλεῖν τὴν μεταξὺ τῶν τροπικῶν, τὰς δὲ μεταξὺ τῶν τροπικῶν καὶ τῶν ἀρκτικῶν εὐκράτους. ἀμφοτέροις δ' ἐπιτιμᾷ δικαίως ... **Pliny** *NH* 2.31, obliquitatem eius (sc. caeli) intellexisse, hoc est rerum fores aperuisse, Anaximander Milesius traditur primus Olympiade quinquagesima octava ... **Plutarch** *De def. orac.* 429F, ἐν δὲ τῷ παντὶ πέντε μὲν ζώναις ὁ περὶ γῆν τόπος, πέντε δὲ κύκλοις ὁ οὐρανὸς διώρισται, δυοῖν ἀρκτικοῖς καὶ δυοῖν τροπικοῖς καὶ μέσῳ τῷ ἱσημερινῷ. **Theon Smyrnaeus** *Expos.* 198.14–16 Hiller, Εὐδῆμος ἱστορεῖ ἐν ταῖς Ἀστρολογίαις, ὅτι Οἰνοπίδης εὗρε πρῶτος τὴν τοῦ ζῳδιακοῦ διάζωσιν [λόζωσιν con]. Zeller Diels] καὶ τὴν τοῦ μεγάλου ἐνιαυτοῦ περίστασιν. **Achilles** *Isag.* 29, περὶ δὲ τῶν ζωνῶν Ἄρατος ἐν τοῖς Φαινομένοις οὐκ ἐμνήσθη, ἄλλοι δέ, ὧν καὶ Ἐρατοσθένης, ἐμνημόνευσαν ... τινὲς δὲ καὶ ταῦτα περὶ τῶν ζωνῶν εἰρήκασιν. ζῶναι εἰσι τῆς γῆς ὑπὸ τοὺς παραλλήλους ὁμοίως πέντε ... **Anatolius** *Περὶ δεκάδος* 9.16 Heiberg, **ps.Iamblichus** *Theol. arith.* 32.20–33.7 (arithmology, both with analogy heaven and earth).

Aëtius *Placita* 2.13

Τίς ἡ οὐσία τῶν ἄστρον, πλανητῶν καὶ ἀπλανῶν

WITNESSES

Ps.Plutarch 2.13, Eusebius 15.30, ps.Galen 56, Qusṭā Ibn Lūqā 2.13  
Stobaeus 1.24.1  
Theodoret 4.17–20  
Cf. Achilles 11, Philo *Somm.* 1.22, 53, Isidore of Pelusium *Ep.* 4.58

ANALYSIS

1. The chapter on the nature of the stars<sup>272</sup> is the second of the four οὐσία chapters in the book (cf. ¶11 on the heaven, ¶20 on the sun and ¶25 on the moon). In terms of lemmata this chapter—together with ¶20 and ¶25 just mentioned—is the longest in the book. Both its contents and its method are highly instructive for our understanding of the *Placita*.

2. In this chapter P's epitome preserves nine lemmata:

ιγ'. Τίς ἡ οὐσία τῶν ἄστρον, πλανητῶν καὶ ἀπλανῶν, καὶ πῶς  
συνέστη

- P2.13.1 Θαλῆς γεώδη μὲν ἔμπυρα δὲ τὰ ἄστροα.  
P2.13.2 Ἐμπεδοκλῆς πύρινα ἐκ τοῦ πυρώδους, ὅπερ ὁ ἀήρ ἐν ἑαυτῷ  
περιέχων ἐξανέθλιψε κατὰ τὴν πρώτην διάκρισιν.  
P2.13.3 Ἀναξαγόρας τὸν περικείμενον αἰθέρα πύρινον μὲν εἶναι κατὰ τὴν  
οὐσίαν, τῇ δ' εὐτονίᾳ τῆς περιδινήσεως ἀναρπάσαντα πέτρους ἐκ  
τῆς γῆς καὶ καταφλέξαντα τούτους ἡσπερικέναι.  
P2.13.4 Διογένης κισσηρώδη τὰ ἄστροα, διαπνοὰς δ' αὐτὰ νομίζει τοῦ  
κόσμου· πάλιν δ' ὁ αὐτὸς ἀφανεῖς μὲν λίθους, πίπτοντας δὲ  
πολλάκις ἐπὶ τὴν γῆν σβέννυσθαι, καθάπερ τὸν ἐν Αἰγὸς ποταμοῖς  
πυροειδῶς κατενεχθέντα ἀστέρα πέτρωνον.

<sup>272</sup> A appears to use the terms ἄστρον and ἀστήρ interchangeably (note ἄστρον in the heading of this chapter and ch. 18, ἀστήρ in the heading of ch. 14–17 and 19), unlike Ach, who distinguishes in § 14 between ἀστήρ (single star) and ἄστρον (constellation). For us, however, there is a difficulty in that the word 'star' can be used to cover all the heavenly bodies or just the stars without the planets. Where there is ambiguity we will use the term 'heavenly bodies' to cover both stars and planets.

- P2.13.5 Ἐμπεδοκλῆς τοὺς μὲν ἀπλανεῖς ἀστέρας συνδεδέσθαι τῷ  
κρυστάλλῳ, τοὺς δὲ πλανήτας ἀνεῖσθαι.
- P2.13.6 Πλάτων ἐκ μὲν τοῦ πλείστου μέρους πυρίνους, μετέχοντας δὲ καὶ  
τῶν ἄλλων στοιχείων κόλλης δίκην.
- P2.13.7 Ξενοφάνης ἐκ νεφῶν (μὲν) πεπυρωμένων, σβεννυμένους δὲ καθ’  
ἐκάστην ἡμέραν ἀναζωπυρεῖν νύκτωρ, καθάπερ τοὺς ἄνθρακας·  
τὰς γὰρ ἀνατολὰς καὶ τὰς δύσεις ἐξάψει εἶναι καὶ σβέσει.
- P2.13.8 Ἡρακλείδης καὶ οἱ Πυθαγόρειοι ἕκαστον τῶν ἀστέρων κόσμον  
ὑπάρχειν, γῆν περιέχοντα ἄερα τε καὶ αἰθέρα ἐν τῷ ἀπείρῳ αἰθέρι·  
ταῦτα δὲ τὰ δόγματα ἐν τοῖς Ὀρφικοῖς φέρεται κοσμοποιούσι γὰρ  
ἕκαστον τῶν ἀστέρων.
- P2.13.9 Ἐπίκουρος οὐδὲν ἀπογινώσκει τούτων, ἐχόμενος τοῦ ἐνδεχομένου.

The doxai show tell-tale signs of both organization and abbreviation. The first two lemmata form a contrasted pair (the contrast is brought out much better in G’s more compact paraphrase, Ἐμπεδοκλῆς δὲ πύρινα μόνα). The next lemma seems like a compromise view, joining together elements of the first two. The fourth continues the rock theme, but with a different kind of stone. The words πάλιν δ’ ὁ αὐτός ... could be an indication that he is combining two doxai. Since this has not happened in the case of the two Empedoclean doxai, it might be surmised that in the case of Diogenes he has skipped some intervening names. Both the second Empedoclean doxa and the second-last doxa seem to deviate from the chapter’s main theme. Epicurus’ final position recalls ¶2 and ¶4.

Comparison with the other witnesses to the tradition of P shows yet again considerable variation in the chapter’s title. P has the fullest title, specifying not only that by ἄστροα both the fixed and the planetary bodies are meant, but also how they came into existence. We opt for the slightly shorter title in E, which leaves out the final part (cf. also G, who omits ἄστροων). Q’s title is even shorter.<sup>273</sup>

3. Chapter 24 in S is one of the anthologist’s more ambitious exercises in coalescence, combining ch. 13–17 in P and adding only a small amount of extraneous material mainly at the very end. Even the Platonic and Aristotelian lemmata in A are scarcely changed.<sup>274</sup> The method, which has been examined in some detail in Vol. I:220–222,

<sup>273</sup> See further our discussion of the problem and this example at Vol. I:180–181.

<sup>274</sup> At 1.24.1m the words γεγενῆσθαι τὰ ἄστροα are most likely added by S. He also adds a couple of sentences from AD on the motions of the stars, even though the lemma from A 2.16\* is recorded at 1.24.2c.



could not be simpler. Despite the coalescence on a grand scale, the basic sequence of the present chapter is preserved, because S uses it as his base, to which he systematically adds lemmata from the subsequent chapters. When these are removed, we are left with the following:

- 1.24 title    Περὶ οὐσίας ἄστρον καὶ σχημάτων, κινήσεώς τε καὶ ἐπισημασίας
- 1.24.1a  
S1            Θαλῆς γεώδη μὲν, ἔμπυρα δὲ τὰ ἄστρα.
- 1.24.1b  
S2ab        Ἐμπεδοκλῆς πύρινα ἐκ τοῦ πυρώδους, ὅπερ ὁ ἀῆρ ἐν ἑαυτῷ περιέχων [ἐξανέλαμψεν ἥτοι] ἐξανέθλιψε κατὰ τὴν πρώτην διάκρισιν καὶ τοὺς μὲν ἀπλανεῖς ἀστέρας συνδεδέσθαι τῷ κρυστάλλῳ, τοὺς δὲ πλανήτας ἀνεῖσθαι.
- 1.24.1c  
S3            Ἀναξαγόρας τὸν περικείμενον αἰθέρα πύρινον μὲν εἶναι κατὰ τὴν οὐσίαν, τῇ δὲ εὐτονίᾳ τῆς περιδινήσεως ἀναρπάσαντα πέτρους ἀπὸ τῆς γῆς <καὶ> καταφλέξαντα τούτους ἡσπερωκένα.
- 1.24.1d  
S4            Διογένης κισσηροειδῆ τὰ ἄστρα, διαπνοίας δὲ αὐτὰ νομίζει τοῦ κόσμου, εἶναι δὲ διάπυρα· συμπεριφέρεσθαι δὲ τοῖς φανεροῖς ἄστροις ἀφανεῖς λίθους καὶ παρ' αὐτὸ τοῦτ' ἄνωνύμους, πίπτοντας δὲ πολλάκις ἐπὶ τῆς γῆς σβέννυσθαι, καθάπερ τὸν ἐν Αἰγὸς ποταμοῖς πυρωδῶς κατενεχθέντα ἀστέρα πέτρων.
- 1.24.1e  
S5            Δημόκριτος πέτρους.
- 1.24.1f  
S6            Ἀρχέλαος μύδρους ἔφησεν εἶναι τοὺς ἀστέρας, διαπύρους δέ.
- 1.24.1g  
S7            Ἀναξίμανδρος πηλῆματα ἀέρος τροχοειδῆ, πυρὸς ἔμπλεα, κατὰ τι μέρος ἀπὸ στομίων ἐκπνέοντα φλόγας.
- 1.24.1i  
S8            Παρμενίδης καὶ Ἡράκλειτος πηλῆματα πυρὸς τὰ ἄστρα.
- 1.24.1k  
S9            Ἀναξίμενης πυρίνην μὲν τὴν φύσιν τῶν ἄστρον, περιέχειν δὲ τινα καὶ γεώδη σώματα συμπεριφερόμενα τούτοις ἀόρατα.
- 1.24.1l  
S10          Πλάτων ἐκ μὲν τοῦ πλείστου μέρους πυρίνους, μετέχοντας δὲ καὶ τῶν ἄλλων στοιχείων.
- 1.24.1m  
S11          Ἀριστοτέλης ἐκ τοῦ πέμπτου σώματος γεγενῆσθαι τὰ ἄστρα.
- 1.24.1n  
S12          Ξενοφάνης ἐκ νεφῶν μὲν πεπυρωμένων· σβεννυμένους δὲ καθ' ἐκάστην ἡμέραν ἀναζωπυρεῖν νύκτωρ καθάπερ τοὺς ἄνθρακας. τὰς γὰρ ἀνατολάς καὶ τὰς δύσεις ἐξάψεις εἶναι καὶ σβέσεις.
- 1.24.1o  
S13          Ἡρακλείδης καὶ οἱ Πυθαγόρειοι ἕκαστον τῶν ἀστέρων κόσμον ὑπάρχειν, γῆν περιέχοντα <καὶ> ἀέρα ἐν τῷ ἀπειρῷ αἰθέρι. ταῦτα

δὲ τὰ δόγματα ἐν τοῖς Ὀρφικοῖς φέρεσθαι, κοσμοποιοῦσι γὰρ  
ἕκαστον τῶν ἀστέρων.

S14 Ἐπικούρου οὐδὲν ἀπογινώσκει τούτων, ἐχόμενος τοῦ ἐνδεχομένου.

All nine of P's lemmata are represented here. It would appear that S has coalesced the two separate Empedoclean doxai P 2.13.2 and 2.13.5. This is the only difference in the order of the two lists. Of the six doxai missing in P, five form a neat block (S5–9), which P must have skipped over. The remaining doxa is S11 on Aristotle. Its place after Plato looks plausible enough.<sup>275</sup>

4. T has passed over chapters 5–11 in his sequence of extracts from Book II, but this chapter is very fully excerpted as follows:

*GAC* 4.17–20, 104.21–105.15

- T1 καὶ τοὺς ἀστέρας δὲ Θαλῆς μὲν γεώδεις καὶ ἐμπύρους ὠνόμασεν  
T2 ὁ δὲ γε Ἀναξαγόρας ἐκ τῆς τοῦ παντὸς περιδινήσεως πέτρους εἶπεν  
ἀνασπασθῆναι, καὶ τούτους ἐκπυρωθέντας τε καὶ ἄνω παγέντας  
ἀστέρας ὀνομασθῆναι.  
T3 καὶ Δημόκριτος δὲ τοῦτον κρατύνει τὸν λόγον·  
T4 (§ 18) ὁ δὲ Διογένης κισσηροειδεῖς λέγει εἶναι τούτους, διαπνοάς τινας  
ἔχοντας·  
T5 ὁ δὲ Ἀναξίμανδρος ξυστήματα ἅττα τοῦ ἀέρος ἔφη, τροχοειδῶς  
πεπιλημένα, πυρὸς ἔμπλεα εἶναι, ἀπὸ τινων στομίων ἀφιέντα τὰς  
φλόγας.  
T6 Διογένης δὲ καὶ ἐμπίπτειν εἰς τὴν γῆν τινας τούτων ἔφησε καὶ  
σβεννυμένους ἐλέγχεσθαι, ὅτι λίθων ἔχουσι φύσιν, καὶ μάρτυρι χρῆται  
τῷ ἐν Αἰγὸς ποταμοῖς πυροειδῶς κατενεχθέντι ποτέ.  
T7 ὁ δὲ Πλάτων ὡς ἐπίπαν μὲν τούτους ἐκ τοῦ πυρὸς ξυνεστάναι, μετέχειν  
δὲ καὶ τῶν ἄλλων στοιχείων φησίν.  
T8 ὁ δὲ γε Ἀριστοτέλης τοῦ πέμπτου σώματος εἵρηκε ξυγγενεῖς.  
T9 (§ 19) Ξενοφάνης δὲ ἐκ νεφῶν μὲν λέγει πεπυρωμένων ξυνίστασθαι,  
σβεννυμένους δὲ μεθ' ἡμέραν νύκτωρ πάλιν ἀναζωπυρεῖσθαι, καθάπερ  
τοὺς ἀνθρώπους.  
T10 (§ 20) Ἡρακλείδης δὲ καὶ ἄλλοι τῶν Πυθαγορείων τινὲς ἕκαστον τῶν  
ἀστέρων κόσμον ὑπάρχειν φασί, γῆν περιέχοντα καὶ ἀέρα ...

Comparison with P and S shows that T reports all but six doxai.<sup>276</sup> It is a fine example of his method. The original text has been paraphrased to a very considerable degree. In some doxai more is changed

<sup>275</sup> Same sequence of views in A 2.11\*, of name-labels and views in 2.25\*. But 2.20 appears to differ.

<sup>276</sup> Or five if the two Empedoclean doxai are regarded as a single doxa as in S.

than left the same, e.g. in the case of Anaxagoras, where αἰθέρα ... καταφλέξαντα τούτους ἥστερικέναι is changed to ἐκπυρωθέντας τε καὶ ἄνω παγέντας ἀστέρας ὀνομασθῆναι. Only twice does the order deviate from S. (1) There are two separate Diogenean doxai compared to the single lemma consisting of two parts found in both P and S. (2) The order of Democritus and Diogenes I is reversed when compared with S. Here T's formulation—καὶ Δημόκριτος δὲ τοῦτον κρατύνει τὸν λόγον—strongly suggests that he himself has made the connection with the similar doxa of Anaxagoras. Diels chooses to follow T against S, but given the contrasting methods of both authors, this is unwise. Finally we note that good reasons can be given in each case for T's treatment of the five particular lemmata he decides to leave out:

- (i) The double Empedoclean doxa is omitted, the first part because it interferes with the sequence Thales–Anaxagoras, both of whom hold that the stars have an earthy base, the second because it is not directly relevant to the subject-matter.
- (ii) Archelaus is left out because his doxa is so similar to those of Anaxagoras and Democritus.
- (iii) Parmenides–Heraclitus adds very little to that of Anaximander.
- (iv) Anaximenes on the invisible γεώδη σώματα repeats the gist of Diogenes II.
- (v) Epicurus' doxa at the end is too vague to have much point.

These motivations are speculative. But T had a good notion of what doxography meant to achieve. His problems will give us cause to think.

5. We are also able to take into account the highly interesting evidence furnished by Achilles, who is closer to A here than anywhere else. Seven doxai form a complete chapter entitled Τίς οὐσία ἀστέρων:<sup>277</sup>

*Isagoge* 11, 40.1–17 Maass ~ 19.22–20.10 Di Maria

- |      |  |
|------|--|
| Ach1 | Θαλῆς μὲν δὴ γῆνιν ἔμπυρον εἶπε τὴν τῶν ἀστέρων οὐσίαν.  |
| Ach2 | Ἐμπεδοκλῆς δὲ πυρίνους αὐτοὺς εἶπεν.   |
| Ach3 | τινὲς δὲ γεώδεις εἰπεῖν αὐτοὺς ἐτόλμησαν, ὧν ἐστὶ καὶ Ἀναξαγόρας· μετὰ γὰρ τὴν πρώτην φησὶ διάκρισιν τῶν στοιχείων τὸ πῦρ χωριζόμενον ἐπὶ τὴν ἰδίαν φύσιν ἀνασπάσαι καὶ διάπυρα ποιῆσαι καὶ τῆς γῆς μόρια τινα· ὅθεν καὶ τὸν ἥλιον ἔλεγεν εἶναι μύδρον, ὡς ἔξῃς ἐροῦμεν. |

<sup>277</sup> Note that Ach has ἀστέρων rather than ἀστρων as in A. This change is motivated by the distinction which he makes between ἀστήρ (single star) and ἀστρων (constellation) in §14. See further above n. 272, and also Part I sect. 10 n. 286.

- Ach4 ἔνιοι δὲ κίσηριν πλαγίαν (πλατεῖαν conj. Diels) οὖσαν ὑπὸ τῆς  
θερμότητος τοῦ αἰθέρος ἀναπτομένην ὑπὸ τῶν τρυμαλιῶν τοῦς  
ἀστέρας φαίνειν.
- Ach5 Πλάτων δὲ ἐκ τῶν τεσσάρων στοιχείων, πλείστου δὲ πυρός.
- Ach6 Ξενοφάνης δὲ λέγει τοὺς ἀστέρας ἐκ νεφῶν συνεστάναι ἐμπύρων  
καὶ σβέννυσθαι καὶ ἀνάπτεσθαι ὥσανει ἄνθρακας, καὶ, ὅτε μὲν  
ἄπτονται, φαντασίαν ἡμᾶς ἔχειν ἀνατολῆς, ὅτε δὲ σβέννυνται,  
δύσεως.
- Ach7 οἱ Στωϊκοὶ δὲ ἐκ πυρὸς λέγουσιν αὐτούς, πυρὸς δὲ τοῦ θείου καὶ  
αἰδίου καὶ οὐ παραπλησίον τῷ παρ' ἡμῖν τοῦτο γὰρ φθαρτικὸν  
καὶ οὐ παμφαές.

Remarkably the first six doxai correspond to six lemmata in A with the same order as in both P and S (= P1-2-3-4-6-7, S1-2-3-4-10-12). There are also numerous verbal parallels in the doxai themselves, as neatly presented in a table by Diels at *DG* 24 (but he is wrong in concluding that Ach is an excerpt from P). Unlike in T, Ach preserves the antithesis between the first two doxai and underlines it more clearly than in PS with a μέν ... δέ construction. The Anaxagorean doxa is introduced by the word ἐτόλμησαν, which can be wholly neutral (i.e. 'claimed'), but in this context perhaps hints at a contrast with the Stoic view that the stars consist of divine fire. Such theological concerns are mostly foreign to the method of the *Placita*.<sup>278</sup> The same opposition is found at Philo *Aet.* 47, where the attitude towards Anaxagoras is openly hostile. The fourth doxa is presented anonymously, but evidently corresponds to the first part of the Diogenean lemma in PS. Nothing in our witnesses to A corresponds to the Stoic lemma. It may have been part of an earlier *Placita* tradition, but then it is surprising that A did not include it in some form or other. It is more likely to have been imported from another source.<sup>279</sup>

In addition there are two more texts which shed light on the treatment of this subject in A's anterior tradition. Philo continues his section on the obscurities of the heavenly realm with a wide range of doxai on the nature of the stars as follows (*Somn.* 1.22 3.209.14–20 C–W):

- Ph1 τί δ'; οἱ ἀστέρες πότερον γῆς εἰσιν ὄγκοι πυρὸς πλήρεις—ἄγρευ  
γὰρ καὶ νάπας καὶ μύδρους διαπύρους εἶπον αὐτοὺς εἶναι τινες,  
αὐτοὶ δεσμωτηρίου καὶ μύλωνος, ἐν οἷς τὰ τοιαῦτά ἐστιν ἐπὶ

<sup>278</sup> Cf. our comments on the cosmological focus of his discussion of providence above at ch. 3 sect. 8; on the absence of a chapter on whether the stars are living beings (as in Ach ch. 13 εἰ ζῶα οἱ ἀστέρες) see below ch. 17 sect. 7.

<sup>279</sup> Diels *DG* 25 suspected Eudorus without giving reasons.

	τιμωρία τῶν ἀσεβῶν, ὄντες ἐπάξιοι—
Ph2	ἢ συνεχῆς καί, ὡς εἶπέ τις, πυκνή ἁρμονία, πλῆματα ἀδιάλυτα αἰθέρος;
Ph3	ἔμψυχοι δὲ καὶ νοεροὶ
Ph4	ἢ νοῦ καὶ ψυχῆς ἀμέτοχοι;
Ph5	προαιρετικὰς δὲ
Ph6	ἢ κατηναγκασμένας αὐτὸ μόνον κινήσεις ἔχοντες;

We have three contrasted pairs of doxai here. The first is directly parallel to our chapter. Either the heavenly bodies are clumps of earth full of fire, or they are dense harmonic condensations of ether. The phrase ὡς εἶπέ τις for the doxa that it is a συνεχῆς καί πυκνή ἁρμονία indicates that he has a particular doxa or name-label in mind, but there is no equivalent in A. It is clear that for Philo there is a high and a low view on all this, as indicated by the parallelism in the three sets of questions. If it is a ἁρμονία, then it will be ensouled and will move by free will. But strictly speaking only the first question is parallel to our chapter. The other two may indicate that in an earlier doxographical tradition used by Philo there was a chapter entitled εἰ ἔμψυχα τὰ ἄστρα, i.e. the equivalent of ¶4 at the level of the celestial bodies, which A for reasons of his own suppressed.<sup>280</sup> The high and low view can be seen even more clearly in the text at *Aet.* 47 to which we have already referred (text below). Another clear reference to a similar cluster of questions is given a little later at *Somn.* 1.53 3.216.13–14 C–W:

τί δὲ περὶ τῆς τῶν ἄλλων ἀστέρων φύσεως ἢ περιφορᾶς ἢ συμπαθείας πρὸς τε ἀλλήλους καὶ τὰπίγεια;

Here we have very compact references to the subject of this chapter (using the term φύσις rather than οὐσία), and that of ¶16 and, more obliquely, ¶19.

The other text comes from an unexpected quarter, the Church father Isidore of Pelusium.<sup>281</sup> As part of *Ep.* 1435, while expounding the meaning of Jude 13 and the additional text, Job 36:22, Isidore is encouraged to dwell on the nature of the stars (ll. 68–86 Évieux):<sup>282</sup>

<sup>280</sup> See further our remarks at ch. 17 sect. 7.

<sup>281</sup> On Isidore's use of the *Placita*, to which attention was first drawn by Bayer (1915), see our discussion in Vol. I:309–312.

<sup>282</sup> Since our discussion in Vol. I the new SC critical text has appeared, prepared by P. Évieux. We now take over his numbering and print his text, which incorporates the readings noted in Vol. I:309 n. 52 (where 4.125 should read 4.58).

εἰ δὲ διὰ τὸ εἰρησθαι, “τοῖς ἄστροις ἐνετειλάμην”, ζῶα λογικά αὐτὰ καὶ αὐτεξούσια ὀριοῦνται τινες—οἶδα γὰρ τινες οὐ μόνον τῶν ἔξω τῆς πίστεως, ἀλλὰ καὶ τῶν πεπιστευκότων τοῦτο δογματίσαντας—περιττὴν καὶ ἀνωφελὴ τὴν ζήτησιν ταύτην εἶναι ἡγούμενος ..., οὐτ’ ἐγκρίναμι τοῦτο, οὐτ’ ἀποψηφίσαμι ... εἴτε οὖν λογικά ἐστι ζῶα, ὥς φασί τινες, εἴτε πύρινοι σφαῖραι, εἴτε δισκοειδῆ σώματα, ἐκ τοῦ αἰθερίου πυρὸς ἐξαφθέντα, εἴτε σφαιροειδεῖς πυρὸς πλῆσεις, εἴτε μύδροι—τινὲς γὰρ τῶν φιλοσόφων τοῦτ’ ἐδογματίσαν—εἴτε ὀχήματα δεκτικά τοῦ αὐλοῦ καὶ ὑπερκοσμίου φωτός, οὐ σφόδρα ἰσχυρισάμην—οὐδὲν γὰρ τοῦτο πρὸς ἀρίστην πολιτείαν συντείνειν ἡγοῦμαι—  
...

This text is in fact closer to Philo than to A. The diaereses used by Philo are easily recognized, but they are mixed together quite unsystematically, with the question of shape (a separate chapter in A) added as well. Isidore has the heavenly bodies in general in mind, not just the fixed stars. *δισκοειδῆ* occurs in A only with regard to the shape of the moon (P 2.27.2). The antithesis between clumps (of earth) and compressions of fire, which we saw in Philo, is present, but is not structured in an opposition. Isidore prefers to pile up the alternatives in a type C diaeresis.<sup>283</sup> Unlike Philo he does not explicitly criticize the view that the stars are μύδροι, perhaps on account of a greater sensitivity to the danger of worshipping the heavenly bodies. Like Philo he too mixes in the view that the stars are rational beings with free will. There is patently no direct connection with A. Nevertheless the text is interesting because it shows that material similar to A was still circulating in obscure places in c. 400 CE. It is perhaps no coincidence that Isidore is a contemporary of Stobaeus, Theodoret and Nemesius.<sup>284</sup>

6. Despite the length of the chapter there can be little doubt about the basic order of its *doxai*. The sequence in S can be taken to reflect that of A. Only in the case of the two ‘double’ *doxai* do uncertainties remain.

- (a) In the case of the Empedoclean lemmata, P has two separate *doxai* (P2 and P5), which in S are kept together, joined by a simple καὶ (S2ab). At first sight we may conclude that P preserves two original *doxai* in A, which S has coalesced. It is not unusual in A to have two *doxai* with

<sup>283</sup> The ὀχήματα δεκτικά τοῦ αὐλοῦ καὶ ὑπερκοσμίου φωτός would seem a later addition under the influence of Platonism; cf. the ὑπερουράνιος ἀστήρ containing intelligible light and the source of the light of the heavenly bodies at Philo *Opif.* 31.

<sup>284</sup> According to his biographer Éviex (1995) 310 it is probable that Isidore studied rhetoric and philosophy in Alexandria.

the same name-label in a single chapter.<sup>285</sup> The second doxa in P is also difficult because of its lack of connection with the subject matter of the chapter. It would be more naturally placed in A 2.15 on the ordering of the stars. It does follow on rather satisfactorily from the earlier doxa because it explains what happens to the heavenly bodies after their birth in the compression of air. So, although it is unusual for P to split up a single lemma, it seems more likely here that S reflects the original state of A. It may be that P decided to copy out the second half of the original lemma later as an afterthought. We differ here from Diels, who places it after the block of doxai found in S but missing in P.<sup>286</sup> This is no more than a guess, and is one more example of his great reluctance to deviate from the order of lemmata as found in P.

- (b) The double Diogenes lemma is also tricky. Here too both P and S have the two parts together, but they are separated in T. Moreover, as noted above, the formulation in P joining the two parts, *πάλιν δ' ὁ αὐτὸς*, is a clear indication that he has connected two originally separate lemmata.<sup>287</sup> Given his method in this chapter, it is likely that S did coalesce here. So we must conclude that in this case there were two Diogenean doxai in the chapter. But the location of the second still remains uncertain. From P and T we can deduce that it came after Anaximander and before Plato. Diels placed it after Parmenides–Heraclitus, but before Anaximenes. We shall argue below that it should come *after* the Anaximenean doxa.

Therefore it may be concluded that the sequence of fifteen lemmata is:

- 1 Thales
- 2 Empedocles
- 3 Anaxagoras
- 4 Diogenes I
- 5 Democritus
- 6 Archelaos
- 7 Anaximander
- 8 Parmenides–Heraclitus
- 9 Anaximenes
- 10 Diogenes II
- 11 Plato
- 12 Aristotle
- 13 Xenophanes
- 14 Heraclides–Pythagoreans
- 15 Epicurus

<sup>285</sup> For examples of this see Runia (1992) 133 n. 71. See also our discussion below in ch. 20 sect. 6.

<sup>286</sup> This is the reason that his reconstruction has 16 lemmata, as against our 15.

<sup>287</sup> It is the only time that this phrase is used for a name-label in P (or S). The expression *πάλιν δὲ* is used within lemmata on a few occasions; cf. P 1.3.7, 4.22.2.

The challenge is now to interpret why A chose to give his doxai this sequence.

7. We turn now to the method and structure of A's chapter. This is one of the very few chapters where Diels has something to say about its structure. So let us start with his comments (*DG* 66–67):<sup>288</sup>

sed Aëtius dum procedit ac magis magisque purum Placitorum fontem sequitur, paulatim certa quaedam ratio constitit. rectissime enim non ex philosophorum nominibus, sed ex opinionum cognatione continuationem quandam instituit. proponam e.g. Π 13 περί οὐσίας ἀστρον.

- 1 Θαλῆς γεώδη ... **ἔμπυρα**
- 2 Ἐμπεδοκλῆς **πύρινα**...
- 3 Ἀναξαγόρας αἰθέρα **πύρινον** ... **πέτρους** καταφλέξαντα ἥστερικένας.
- 4 Δημόκριτος **πέτρους**
- 5 Διογένης **κισιρῶδη** ... **διάπυρα**
- 6 Ἀρχέλαος **μύδρους** ... **διαπύρους**
- 7 Ἀναξίμανδρος **πυλῆματα** ...
- 8 Παρμενίδης καὶ Ἡράκλειτος **πυλῆματα** ...
- 9 Διογένης **συμπεριφέρεσθαι** ... **ἀφανεῖς λίθους** ...
- 10 Ἀναξίμενης ... **γεώδη σώματα συμπεριφερόμενα** ... **ἀόρατα**
- 11 Ἐμπεδοκλῆς ... ἀπλανεῖς συνδεδέσθαι ..., πλανήτας ἀνεῖσθαι.

Totum caput vides in tres partes divisum. una astrorum naturam tractat, altera stellas invisibiles, tertia fixas errantesque. tum vero intra hanc partitionem ex opinionum externa similitudine singulae singulis aptantur, ut paene artificii eius commune fias, quo Theognidis elegiae pleraeque a collectore conexas sunt. neque enim aequum est, interiorem quandam philosophiae cognitionem ab eo postulare, cuius una laus in excerpendo partiendo ordinando posita est.

A contrast is then made with the method of Theophrastus, who based his chapters on a more subtle division of the philosophical problems involved. Diels is of course right to emphasize that his ordered series is determined not by the name-labels but by the grouping together of doctrines. But the assertion that there is an artificial process of concatenation, like that employed in compiling an anthology of poems, will not stand up. The tripartition he discerns involves eight, two and one lemma, amounting to a highly unbalanced structure, while the remaining four lemmata (five in his reconstruction) of the chapter are treated as non-existent. It is surely possible to do better.

<sup>288</sup> We have used bold type to render his use of expanded type.



8. Admittedly the structure of the chapter is not as neat as that of some others, no doubt because of the large number of views that have been included. It can be explained by means of three factors: (1) a fundamental διαίρεσις between a basically earthy, rocklike substance (which, of course, is heated up or inflamed, otherwise the stars would not be visible) and a purer fiery or ethereal substance; (2) a general movement in the chapter from the first to the second pole of the διαφωνία (hence the arrow in the structural diagram below); (3) the inclusion of a number of subsidiary themes. As occurs in other longer chapters, A thus combines both the type A and type C diaeresis in his structure. We proceed in a number of steps.

- (1) At the outset there is an apparent difficulty. Thales is clearly the leader of the ‘rock brigade’. But then A immediately cites Empedocles, whose doxa belongs to the ‘fiery’ group, the rest of whom are to follow later (we note how the term ἐξανάθλιψις anticipates the subsequent πλῆματα). The only reason for this can be, we submit, that A wanted to set out the basic antithesis between the two positions at the beginning of the chapter. As noted above, Ach reinforces the opposition with his μέν ... δέ construction. T preferred to retain continuity and so decided not to copy out the second lemma.
- (2) Next follow four lemmata (§§ 3–6) in which the stars are masses of rock or iron which have become red-hot. There does not seem to be any clear differentiation between these similar views. A simply places them side by side, without further subdivision.<sup>289</sup>
- (3) In the next two lemmata (§§ 7–8) A moves on to doxai in which the stars are πλῆματα of air (but filled with fire) and fire respectively, i.e. the substance no longer has the solid earthen core of the previous position.
- (4) Diels followed now with the second Diogenean lemma, but the transition is unnecessarily harsh. If Anaximenes (§ 9) follows as in S, then the sequence of fiery doxai is maintained (here ‘fiery’ is used in an unqualified sense). But A now appends an interesting qualification. Among the heavenly bodies are also invisible earthy bodies that are carried along with them (i.e. meteorites, required to explain eclipses etc.). Thus we get a perfect example of a view that mediates between the poles of the διαίρεσις, i.e. B + A. The doxographer then recalls that Diogenes, one of the ‘rock theorists’, also mentioned such invisible bodies, so his is an additional compromise view this time involving visible and invisible stones (§ 10). There is no doubt that the repeated verb συμπεριφερόμενα–συμπεριφέρεσθαι is meant to link up the lemmata as Diels saw, but there is also an implicit contrast.

<sup>289</sup> Unless he distinguishes between stones in general and special stones (with holes, metal clumps). If so, then Democritus would need to come after Anaxagoras, as in T against S. But in ¶ 20 μύδος and πέτρος are regarded as synonyms.

- (5) Three further 'fiery' views follow (§§ 11–13). The Platonic doxa (mainly fire, with traces of the other elements) is distinctive. It is very clearly based on *Ti.* 40a2 (note *πλείστην*) and recurs in ¶20 on the sun and ¶25 on the moon. The traces of other elements retain a weak link with the other basic position. The Aristotelian doxa follows straight after. This may mean that for once chronological–diadochic considerations play a role, since it was well known that Aristotle's doxa is a reaction to the Platonic view (cf. ¶25, but not ¶20). But it is more likely that the fifth element is seen as a very pure form of fire (implicit at A 2.11.5\*). Xenophanes' doxa of the stars as fiery clouds which are daily quenched and re-ignited comes last in this group, most likely because it is an unusual view which the doxographer had trouble placing.
- (6) Two doxai remain (§§ 14–15). The former is perhaps best read as an additional comment, although it is true that, if each star is a little microcosm, then it has both earth (with air) and ether, so that one could read this as yet another compromise view involving both earthiness and ethereal fire. The additional reference to Orphic writings is intriguing and may be based on the interpretation of Orphic lines by a person like the author of the Derveni papyrus, who interpreted the Orphic poem along Diogenean and Anaxagorean lines.<sup>290</sup> The latter doxa is quite different. It is another affirmation of the Epicurean 'modal' view, which rejects all diaeresis in the name of τὸ ἐνδεχόμενον. We encountered this view earlier at A 2.2.5\*, where the same technical term ἐνδέχεσθαι, which goes back to Epicurus himself (cf. D.L. 10.88), is found. At D.L. 10.90, however, Epicurus indicates only that the heavenly bodies may be pneumatic or fiery or both, but does not emphasize the ἐνδεχόμενον.

The structure of the chapter, which because of the large number of doxai is more complex than most chapters, can thus be summarized as follows. The fifteen doxai fall into six smaller groups. A first sets out the basic diaeresis between the view that the heavenly bodies are earthy and that they are fiery. Thereafter a list of four views that follow on from the first view are given. In all but one case (Democritus) it is also indicated that they are in some way inflamed, which explains their visibility. Thereafter two doxai present the heavenly bodies as condensations of air and fire respectively. The next group adds the consideration that there might be invisible bodies included among the heavenly bodies. Then there are two more views that present the nature as basically fiery or ethereal, with a third one added as an oddity. Finally there are two additional views which cannot be accommodated in the basic diaeresis. There is a general movement in the chapter from

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<sup>290</sup> See above at ch. 2 sect. 5, for additional doxographical references to the Orphics in A and Ach.

earthy to fiery–ethereal views, as indicated by the arrow, but within that movement a large number of subtly different views are accommodated.

9. The basic diaeresis of the chapter, i.e. the division into solid earthen substance and light fiery substance is confirmed not only by the close parallels in Ach, Philo and Isidore, but also by another important text. In the introductory section to Book VII of his *Naturales quaestiones* (1.6–7, text below) Seneca mentions the subject *de stellarum siderumque natura* and distinguishes very clearly between *flamma contracta* and *solida quaedam terrenaque corpora*. The notion of compressed flame recalls the doxa of Empedocles in A, but even more clearly the *πλήματα* of Philo and the *πλήσεις* of Isidore. The parallels we have collected help us understand the rationale behind the chapter. They also give strong supporting evidence that A makes use of an anterior doxographical tradition which was extensively used by other authors as well. The contrast with these sources suggest certain adaptive strategies on his part, e.g. a lack of interest in theological issues when compiling material in a cosmological context.

10. Finally it is worth noting that the chapter's basic division also makes some sense in a historical perspective. In his *RE* article on the fixed stars Boll asserts:<sup>291</sup>


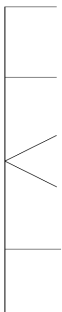



Unter den wissenschaftlichen Anschauungen lassen sich zwei Gruppen bilden: die Sterne als feurig oder als der Erde wesensgleich; die erstere Auffassung ist wieder zweigeteilt, je nachdem das himmlische Feuer als verwandt mit dem irdischen und durch irdische Dünste genährt oder als ein besonderer Stoff gefaßt wird.

The main division is exactly the same as that of the doxographer. The second division does not play a role in the organization of our chapter, although the general movement towards a purer form of fire or ether is in agreement with it. It is surprising that Aristotle in his discussion on the nature of the stars in *De Caelo* 2.7 does not take the 'earthy' view into account, even though it was espoused by diverse Presocratics. It would seem that it was too far from his own view to serve as a useful dialectical example in this case.

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<sup>291</sup> Boll (1909) 2408.

STRUCTURE (see above sect. 8)

I	The basic diaeresis	
	A <sub>1</sub> earthy but inflamed (= § 1)	
	B <sub>1</sub> fiery, compressed from air (= § 2)	
II	Massive earthy bodies (A)	
	A <sub>2</sub> rocks from earth inflamed by ether (= § 3)	
	A <sub>3</sub> rocks (= § 4)	
	A <sub>4</sub> inflamed pumice-stones (= § 5)	
	A <sub>5</sub> fiery clumps of iron (= § 6)	
III	Condensations (≈ B)	
	B <sub>2</sub> condensations of air, filled with fire (= § 7)	
	B <sub>3</sub> condensations of (pure) fire (= § 8)	
IV	Invisible stars (A/B)	
	B <sub>4</sub> + C fiery, but with invisible rocks (= § 9)	
	A <sub>4</sub> + C visible and invisible rocks (= § 10)	
V	Basically fiery: further views (B)	
	B <sub>5</sub> fiery, with other elements admixed (= § 11)	
	B <sub>6</sub> quintessence (= § 12)	
	B <sub>7</sub> fiery clouds (= § 13)	
VI	Additional views	
	D <sub>1</sub> each star its own cosmos (= § 14)	
	D <sub>2</sub> 'modal' view: all the above possible (= § 15)	

RECONSTRUCTED TEXT

ιγ'. Τίς ἡ οὐσία τῶν ἄστρον πλανητῶν καὶ ἀπλανῶν<sup>1</sup>

- 1 Θαλῆς γεώδη μὲν ἔμπυρα δὲ τὰ ἄστροα.
- 2 Ἐμπεδοκλῆς πύρινα ἐκ τοῦ πυρώδους, ὅπερ ὁ ἀήρ<sup>2</sup> ἐν ἑαυτῷ περιέχων ἐξανέθλιψε<sup>3</sup> κατὰ τὴν πρώτην διάκρισιν· τοὺς μὲν ἀπλανεῖς ἀστέρας συνδεδέσθαι τῷ κρυστάλλῳ, τοὺς δὲ πλανήτας<sup>4</sup> ἀνεῖσθαι.
- 3 Ἀναξαγόρας τὸν περιεκείμενον αἰθέρα<sup>5</sup> πύρινον μὲν εἶναι κατὰ τὴν οὐσίαν, τῇ δ' εὐτονία τῆς περιδινήσεως ἀναρπάσαντα<sup>6</sup> πέτρους ἀπὸ<sup>7</sup> τῆς γῆς καὶ καταφλέξαντα τούτους ἡστερικέναι<sup>8</sup>.
- 4 Διογένης κισσηρώδη τὰ ἄστροα, διαπνοάς δ' αὐτὰ νομίζει τοῦ κόσμου<sup>9</sup>· εἶναι δὲ διάπυρα<sup>10</sup>.
- 5 Δημόκριτος πέτρους.
- 6 Ἀρχέλαος μύδρους [ἔφησεν εἶναι τοὺς ἀστέρας]<sup>11</sup>, διαπύρους δέ.
- 7 Ἀναξίμανδρος πιλήματα ἀέρος τροχοειδῆ, πυρὸς ἔμπλεα, κατὰ τι μέρος ἀπὸ στομίων ἐκπνέοντα φλόγας.
- 8 Παρμενίδης καὶ Ἡράκλειτος πιλήματα πυρός<sup>12</sup>.

- 9 Ἀναξιμένης πυρίνην μὲν τὴν φύσιν τῶν ἄστρον, περιέχειν δὲ τινα  
καὶ γεώδη σώματα συμπεριφερόμενα τούτοις ἀόρατα.
- 10 Διογένης συμπεριφέρεσθαι [δὲ]<sup>13</sup> τοῖς φανεροῖς ἄστροις ἀφανεῖς  
μὲν λίθους, πίπτοντας δὲ πολλάκις ἐπὶ τὴν γῆν σβέννυσθαι,  
καθάπερ τὸν ἐν Αἰγὸς ποταμοῖς πυροειδῶς κατενεχθέντα ἀστέρα  
πέτρινον.
- 11 Πλάτων ἐκ μὲν τοῦ πλείστου μέρους πυρίνους, μετέχοντας δὲ καὶ  
τῶν ἄλλων στοιχείων κόλλης δίκην<sup>14</sup>.
- 12 Ἀριστοτέλης ἐκ τοῦ πέμπτου σώματος<sup>15</sup>.
- 13 Ξενοφάνης ἐκ νεφρῶν μὲν<sup>16</sup> πεπτρωμένων, σβεννυμένους δὲ καθ'  
ἐκάστην ἡμέραν ἀναζωπυρεῖν νύκτωρ, καθάπερ τοὺς ἄνθρακας·  
τὰς γὰρ ἀνατολάς καὶ τὰς δύσεις ἐξάψεις εἶναι καὶ σβέσεις.
- 14 Ἡρακλείδης καὶ οἱ Πυθαγόρειοι ἕκαστον τῶν ἀστέρων κόσμον  
ὑπάρχειν, γῆν περιέχοντα ἀέρα τε καὶ αἰθέρα<sup>17</sup> ἐν τῷ ἀπείρῳ αἰ-  
θέρι· ταῦτα δὲ τὰ δόγματα ἐν τοῖς Ὀρφικοῖς φέρεται· κοσμοποιοῦσι  
γὰρ ἕκαστον τῶν ἀστέρων.
- 15 Ἐπίκουρος οὐδὲν ἀπογινώσκει τούτων, ἐχόμενος τοῦ ἐνδεχομένου.

- 1 E, cf. G (om. ἄστρον), add. καὶ πῶς συνέστη P, τίς ἡ οὐσία τῶν ἄστρον Q, περι  
οῦσας ἄστρον S
- 2 αἰθήρ P<sup>1</sup>
- 3 ἐξανέλαμψεν ἤτοι ἐξανέθλιψε S
- 4 πλανῶντας E, πλάνους ὄντας conj. Mras
- 5 ἀέρα E
- 6 ἀνασπᾶσαντα v.l. E, cf. T ἀνασπασθῆναι
- 7 ἐκ P
- 8 P, ἡστερωκέναι S
- 9 τοῦ κόσμου om. T
- 10 εἶναι δὲ διάπυρα S, intercidit in P
- 11 ἔφησεν εἶναι τοὺς ἀστέρας addidit S modo solito
- 12 τὰ ἄστρα add. S ipse
- 13 δέ addidit S
- 14 κόλλης δίκην om. S
- 15 γεγενῆσθαι τὰ ἄστρα add. S ipse (cf. cap. 11)
- 16 E, om. PG
- 17 καὶ αἰθέρα om. S, secl. Diels, Kern, γῆν, ἀέρα τε καί, ἀπείρῳ om. E

§ 1 11A17a DK; § 2 31A53–54 DK; § 3 59A71 DK; § 4 64A12 DK; § 5 68A85 DK; § 6 60A15 DK; § 7 12A18 DK; § 8a 28A39 DK; § 8b 22A11 DK; § 9 13A14 DK; § 10 64A12 DK; § 11–; § 12 T19 Gigon; § 13 21A38 DK; § 14a fr. 113 Wehrli, 75 Schütrumpf; § 14b cf. adn. 44A18 DK; § 14c fr. 22 Kern, fr. 30 F Bernabé; § 15 cf. adn. ad D.L. 10.90, 382.11 Usener

13. What is the substance of the heavenly bodies\*, both planets and fixed stars

- 1 Thales (declares that) the heavenly bodies are earthy but inflamed.
- 2 Empedocles (declares that they are) fiery, made from fiery (material), which the air enfolded within itself and squeezed out in the first separation; the fixed heavenly bodies became stuck to the crystalline (heaven) but the planets were released.
- 3 Anaxagoras (declares that) the surrounding ether is fiery in nature, but through the vigour of the whirling movement it snatched up rocks from the earth, ignited these and made them into heavenly bodies.
- 4 Diogenes (declares that) the heavenly bodies are sponge-like, and he considers them to be the respiratory vents of the cosmos; they are also inflamed.
- 5 Democritus (declares that they are) rocks.
- 6 Archelaus (declares that they are) clumps of iron, but inflamed.
- 7 Anaximander (declares that they are) wheel-like condensations of air, filled with fire, partly expelling flames from vents.
- 8 Parmenides and Heraclitus (declare that they are) condensations of fire.
- 9 Anaximenes (declares that) the nature of the heavenly bodies is fiery, but that it also includes some earthy bodies which are borne around with these and are invisible.
- 10 Diogenes (declares that) together with the visible heavenly bodies invisible stones are borne around, and that often they fall to the earth and are quenched, just as in the case of the heavenly body in the form of a rock (i.e. meteorite) that descended in a fire-like manner at Aegospotami.
- 11 Plato (declares that the heavenly bodies are) for the most part fiery, but also partake in the other elements in the manner of glue.
- 12 Aristotle (declares that they are made) from the fifth body.
- 13 Xenophanes (declares that they consist) of ignited clouds, and that every day they are quenched and (then) re-ignite at night, just like coals; for the risings and settings (of the heavenly bodies) are (in fact) ignitions and quenchings.
- 14 Heraclides and the Pythagoreans (declare that) each of the heavenly bodies exists as a cosmos, including an earth, air and ether in the unlimited ether. These doctrines are conveyed in the Orphic (writings), for they (too) make each of the heavenly bodies into a cosmos.
- 15 Epicurus does not reject any of these (views), holding fast to what is possible.

\* on the translation of ἀστήρ as 'heavenly body' see above n. 272

## DIALECTICAL-DOXOGRAPHIC PARALLELS

**Aristotle** *Cael.* 2.7 289a11, περὶ δὲ τῶν καλουμένων ἄστρον ἐπόμενον ἂν εἴη λέγειν, ἐκ τίνων τε συνεστᾶσι ... εὐλογώτατον δὲ καὶ τοῖς εἰρημένους ἐπόμενον ἡμῖν τὸ ἕκαστον τῶν ἄστρον ποιεῖν ἐκ τούτου τοῦ σώματος ἐν ᾧ τυγχάνει τὴν φορὰν ἔχον ... ὥσπερ γὰρ οἱ πύρινα φάσκοντες εἶναι διὰ τοῦτο λέγουσιν, ὅτι τᾶν σῶμα πῦρ εἶναι φασιν ... cf. 298a24–26 cited above on ch. 11; *Mete.* 1.3 339b30–36, see on ch. 21. **Theophrastus** *Phys. Dox.* fr. 21 Diels (Plato and Aristotle). **Epicurus** *ap.* D.L. 10.90, ἥλιός τε καὶ σελήνη καὶ τὰ λοιπὰ ἄστρα ... εὐθὺς διεπλάττετο καὶ αὐξήσιν ἐλάμβανεν κατὰ προσκρίσεις καὶ δινήσεις λεπτομερῶν τινων φύσεων, ἥτοι πνευματικῶν ἢ πυροειδῶν ἢ συναμφοτέρων ... **Posidonius** cf. above on ch. 11. **Philo** *Opif.* 53, ἡ ὄρασις καὶ κατιδοῦσα φύσιν ἀστέρων ... εἴθ', οἷα φιλεῖ, προσπεριεργάζετο, τίς ἢ τῶν ὁρατῶν δὴ τούτων οὐσία ... (cf. also *Abr.* 162, *Spec.* 3.190); *Somn.* 1.22, 53, cited above; *Aet.* 47, ἔδει γὰρ ἢ μύδρους διαπύρους ἀποφίνασθαι, κάθαπερ ἔνιοι τῶν οἷα περὶ δεσμοτηρίου φλυαρούντων τοῦ σύμπαντος οὐρανοῦ, ἢ θείας ἢ δαιμονίας φύσεις νομίζοντας τὴν ἀρμόττουσαν θεοῖς ἀφθαρσίαν προσομολογήσαι. **Seneca** *Nat.* 7.1.6–7, at mehercules non aliud quis aut magnificentius quaesierit aut didicerit utilius quam de stellarum siderumque natura, utrum flamma contracta, quod et visus noster affirmat et ipsum ab illis fluens lumen et calor inde descendens, an non sint flammei orbes, sed solida quaedam terrenaque corpora, quae per igneos tractus labentia inde splendorem trahant caloremque, non de suo clara. in qua opinione magni fuerunt viri, qui sidera crediderunt ex duro concreta et ignem alienum pascencia. ‘nam per se’ inquiunt ‘flamma diffugeret, nisi aliquid haberet quod teneret et a quo teneretur, conglobatamque nec stabili inditam corpori profecto iam mundus turbine suo dissipasset.’ **Isidore of Pelusium** *Ep.* 4.58, cited above. **Proclus** *in Ti.* 3.112.23–15.17 (Plato v. Aristotle). **Johannes Philoponus** *in Ph.* 219.16, νομίζουσι δὲ διακρίνεσθαι φυσιολογίαν μαθηματικῆς, τῷ τὴν μὲν φυσιολογίαν περὶ τὰς οὐσίας τῶν πραγμάτων καταγίνεσθαι, μαθηματικὴν δὲ περὶ τὰ πάθη καὶ τὰ σχήματα, τοῦτο δέ, φησὶν, οὐκ ἔστιν ἀληθές· καὶ οἱ φυσιολόγοι γὰρ φαίνονται μὴ μόνον περὶ τῶν οὐσιῶν διαλεγόμενοι, ἀλλὰ καὶ περὶ σχημάτων καὶ παθῶν. αὐτὸς γοῦν ἐν τῇ Περὶ οὐρανοῦ οὐ μόνον περὶ τῆς οὐσίας τῶν οὐρανίων ἀπέδειξεν, ὅτι ἐστὶν ἑτέρας τινὸς παρὰ τὰ τέσσαρα στοιχεῖα, ἀλλ’ ὅτι καὶ σφαιρικὸν ἔχει κατὰ φύσιν τὸ σχῆμα, καὶ ὅτι κυκλοφορικόν ... **Simplicius** *in Cael.* 435.20–436.3, 438.30–34. **Johannes Tzetza** *Comm. in Arist. Nubes* 102 4.402 Holwerda, ἀλαζῶν λέγεται ὁ ἄλλῃ καὶ πλάνῃ ζῶν καὶ βίῳ ἀστάτῳ, ὥς οἱ φιλόσοφοι περὶ ἡλίου, σελήνης, ἀστέρων τε τῶν λοιπῶν καὶ πάντων ἀπλῶς ψυχρομύθους λόγους πλατύνοντες ἐναντίους καὶ μαχομένους ἀλλήλοις καὶ αὐτοὺς ἑαυτοῖς, μεγέθη τε τούτων καὶ ἀπὸ γῆς ἀποστάσεις καὶ οὐσίας καὶ φύσεις καὶ θέσεις καὶ σχήματα καὶ ἄλλα μυρία λαλοῦντες.

Aëtius *Placita* 2.14  
Περὶ σχημάτων ἀστέρων

WITNESSES

Ps.Plutarch 2.14, Eusebius 15.31, ps.Galen 56a, Qusṭā Ibn Lūqā 2.14  
Stobaeus 1.24.1k, 2d  
Theodoret 4.20  
Cf. Achilles 12

ANALYSIS

1. After the long (by A's standards!) introductory chapter on the heavenly bodies' οὐσία, six chapters follow in P, all discussing various subjects related to them. The first concerns their shape, relating to the category of quality. The sequence is the same as in the case of the cosmos in ch. 1–2.

2. P preserves four lemmata:

ιδ'. Περὶ σχημάτων ἀστέρων

- P2.14.1 οἱ Στωικοὶ σφαιρικοὺς τοὺς ἀστέρας, καθάπερ τὸν κόσμον καὶ ἥμιον καὶ σελήνην.  
P2.14.2 Κλεάνθης κωνοειδεῖς.  
P2.14.3 Ἀναξιμένης ἥλων δίκην καταπεπηγέναι τῷ κρυσταλλοειδεῖ.  
P2.14.4 ἔνιοι δὲ πέταλα εἶναι πύρινα, ὥσπερ ζωγραφήματα.

E's version of this chapter deletes the second doxa and contains a surprising number of minor variants. In the title he reads σχήματος, as do some of the mss. of P. After this chapter he turns to P 1.4 and does not return to P 2.15 until 15.46. G follows P rather faithfully in this chapter, except that he omits the title (hence the deviant numbering). Diels considers it possible that the suppression was deliberate, but restores it nevertheless.

3. S absorbs three of P's four doxai in the massive exercise of coalescence of his ch. 24:



- 1.24 title    Περὶ οὐσίας ἄστρον καὶ σχημάτων, κινήσεώς τε καὶ ἐπισημασίας  
 1.24.1k  
 S<sub>1</sub>            Ἀναξιμένης  
               —ἥλων δίκην καταπεπηγέναι τὰ ἄστροα τῷ κρυσταλλοειδεῖ.  
 1.24.2d  
 S<sub>2</sub>            οἱ μὲν ἄλλοι σφαιρικοὺς τοὺς ἀστέρας αὐτούς,  
 S<sub>3</sub>            Κλεάνθης δὲ κωνοειδεῖς.

In S<sub>1</sub> he links the doxa of Anaximenes to the lemma of the same philosopher in the previous chapter and two later ones, causing P's final anonymous lemma to be left out (as happens more often with such material, see Vol. I:235). In S<sub>2</sub> he simplifies the doxa compared with what we found in P. Heeren, followed by Diels, supplied the name-label Στωικοί from P (cf. also the lemma from 2.15 in 2a). We return to this question below. The contrast between S<sub>2</sub> and S<sub>3</sub> is made clearer by a μὲν ... δέ construction. Diels also prints a fifth doxa attributed to Metrodorus, but this is a mistake (see below ch. 15 sect. 3).

4. In a brief paraphrase of the chapter T continues on from his adaptation of A 2.13 and refers briefly to two doxai:

*GAC* 4.20, 105.15–16

- T<sub>1</sub>    καὶ οἱ μὲν σφαιροειδεῖς τουτοὺς εἰρήκασι,  
 T<sub>2</sub>    κωνοειδεῖς δὲ Κλεάνθης ὁ Στωικός.

He agrees with S on the use of the μὲν ... δέ construction and the absence of the Stoic name-label. The fact that he adds it to the Cleanthean name-label suggests that the Stoic name-label was not used for that doxa in his source. The argument that he would not have used it otherwise does not hold, for he knew enough (albeit indirectly) to add the label himself.<sup>292</sup>

5. Evidence from Ach can usefully complement what we have learnt so far. He has a separate chapter on the subject with the same heading (except that he has σχήματος in the singular as in E) and also has four lemmata:

<sup>292</sup> Cleanthes is also referred to in 5.27, together with Zeno, in a quote from Longinus (copied from Eus. *PE* 15.21.3 = fr. 20 Patillon–Brisson).

*Isagoge* 12, 40.19–23 Maass ~ 20.11–15 Di Maria

- Ach1 Κλεάνθης αὐτοῦς κωνοειδὲς ἔχειν σχῆμά φησι,  
 Ach2 τινὲς δὲ πετάλοις ἔοικέναι ἐκ πυρὸς (ἐκπύροις conj. Maass) βάθος  
 οὐκ ἔχοντας, ἀλλ' ὥσπερ γραφὰς εἶναι,  
 Ach3 τινὲς δὲ πυραμίδας.  
 Ach4 οἱ δὲ Στωικοὶ σφαιρικὸν ἔχειν σχῆμα λέγουσι, καθάπερ καὶ τὸν  
 ἥμιον καὶ τὸν περιέχοντα οὐρανόν.

The similarities to A cannot be coincidental and indicate a shared tradition. Three of P's doxai can easily be recognized in the order Ach1 = P2, Ach2 = P4, Ach4 = P1. Anaximenes drops out and an additional pyramidal shape attributed to anonymi is included. But the arrangement is rather different (and less well organized). Ach seems to be working climactically towards the most common view, which is the same as the first doxa in P. This means no antithesis is achieved with the view of Cleanthes.

6. Our witnesses in the direct tradition offer no more than four lemmata, and there is no way of knowing whether there might have been more. There is also no reason to diverge from the order in P. The four divide easily into two pairs of two doxai. The first pair gives rise to some tricky philological problems. For both the name-labels and the μέν ... δέ construction P is pitted against ST. The opposition between the Stoics and Cleanthes may seem strange, since Cleanthes himself is a Stoic. We might want to read οἱ ἄλλοι Στωικοὶ as conjectured by Heeren and Diels for S. However, a similar use of name-labels was found at A 2.9\* (the Stoics ... Posidonius). We note too the use of the Stoic name-label in Ach and the fact that the Stoics take the first place in the parallel chapters A 2.2 and 2.27 (but not 2.22). So the point can be argued both ways and certainty is impossible to attain. We incline to retaining P's reading as the *lectio difficilior*. Similarly the μέν ... δέ construction should not be included. It is more likely that it was added by the paraphrasing activities of ST than that it was deleted by P.

7. It is easy to see that the two pairs of doxai represent two type A diaereses, i.e. views that are meant to be contrasted with each other. In the former the contrast involves two different kinds of shapes (Ach has a third shape in a type C list). In the latter the difference involves three and two dimensions (this aspect is better brought out by Ach). The difference between the two contrasting pairs can be neatly linked to the

question raised by both Seneca and Lactantius in their set of *quaestiones* or θέσεις on the celestial realm, namely whether the stars were positioned below the outer sphere or fixed in it. A similar difference of opinion is implied in the description of the fixed stars by the Stoic Balbus in Cicero. See the texts listed in the parallels in ch. 15. A similar opposition seems to underlie the two sets of pairs here. If the stars are spherical, then strictly speaking they cannot be fixed in the outer sphere; they can only be hemi-spherical, i.e. like studs (ἤλοι),<sup>293</sup> or flat figures (πέταλα), or pyramidal (as in Achilles).<sup>294</sup>

8. We note that the subordination of the name-labels to the doxai is well illustrated here. The Stoa is by no means the only school who regarded the stars as spherical (cf. Aristotle *Cael.* 2.8 290a8 cited below), but their position is taken as representative, it being possible then to point out a disagreement within the school itself.<sup>295</sup> As for the second pair, there has been much disagreement on what should be attributed to Anaximenes, since the second doxa would seem to suit his views better than the first (cf. the reference to the sun as πέταλον at A 2.22.1\*).<sup>296</sup> Some radical textual proposals have been made. Brind'Amour somewhat naively suggested that the name-labels be reversed.<sup>297</sup> Long ago Heath had proposed that ἔνιοι be emended to ἐνίους,<sup>298</sup> so that the distinction would occur within the Anaximenean doxa. Schwabl in turn proposed that the words ἔνιοι δὲ πέταλα εἶναι πύρινα be regarded as a comment on the planets that has found its way into the text on the fixed stars.<sup>299</sup> It is true that a mix-up of name-labels may quite easily have occurred.<sup>300</sup> But if the evidence of Ach is to be believed, this must have happened very

<sup>293</sup> Cf. the physical allegory of the studs in Nestor's goblet in terms of the stars in Athenaeus (text below), who then quotes a similar comparison in Aratus. Mansfeld (1983–1986) 1.96 suggested that the words ὅσπερ ζωγραφήματα might better go with the Anaximenean doxa than the anonymous one, but the parallel text in Achilles does not encourage the transposition.

<sup>294</sup> A conical shape would also be possible, but the Cleanthean doxa is specifically contrasted with the spherical.

<sup>295</sup> See above ch. 9 sect. 6 *ad fin.* on A's fondness for majority–minority divergences within Stoic school and see also the comments in Part I sect. 15 text after n. 365.

<sup>296</sup> Cf. Guthrie (1962–1981) 1.135, Lloyd (1966) 317, Kirk–Raven–Schofield (1983) 155; other references at Lachenaud (1993) 248.

<sup>297</sup> Brind'Amour (1969), without any reference to the details of transmission.

<sup>298</sup> Heath (1913) 41–43.

<sup>299</sup> Schwabl (1966), supported by Wöhrle (1993) 72.

<sup>300</sup> E.g. if the Anaximenean doxa originally belonged to Empedocles (cf. the doxa at

early, probably prior to A. Schwabl errs in treating the text as a simple doctrinal report wholly divorced from its doxographical context.

9. The dialectical-doxographical parallels on the specific subject of the shape of the stars are not copious. Aristotle indicates the subject very clearly in *De Caelo* 2.8 and 2.11, but does not give any doxa as alternative to the view that it is spherical (texts below). The subject appears to have been almost entirely uncontroversial. So, for example, it is not mentioned by Philo in his long list of questions related to heaven and the heavenly bodies (see ch. 11 sect. 5(3)). The texts on the connection between the stars and the surface of heaven more properly belong in the next chapter and have been placed there. Isidore mixes in the question of shape in the passage on the heavenly bodies cited in our analysis of 2.13\* (πύρινοι σφαῖραι, δισκοειδῆ σώματα, σφαιροειδεῖς πυρὸς πλήσεις). The term δισκοειδῆ is also used in A 2.27.5\* (Empedocles on the moon) and P 3.10.5 (Democritus on the earth). It is one of those -ειδής terms that are very common in the parallel chapters 2, 22, 27, P 3.9 (see our comments at ch. 2 sect. 8).

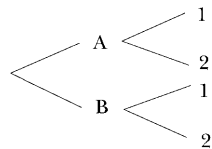
STRUCTURE (see above sect. 7)

A shape of stars

- 1 spherical (= §1)
- 2 cone-shaped (= §2)

B shape of stars as connected to outer sphere

- 1 fixed as (three-dimensional) studs (= §3)
- 2 as (two-dimensional) fiery leaves (= §4)



RECONSTRUCTED TEXT

ιδ'. Περὶ σχημάτων<sup>1</sup> ἀστέρων

- 1 οἱ Στωικοὶ<sup>2</sup> σφαιρικοὺς τοὺς ἀστέρας, καθάπερ τὸν κόσμον καὶ ἥλιον καὶ σελήνην<sup>3</sup>,
- 2 Κλεάνθης<sup>4</sup> κωνοειδεῖς.
- 3 Ἀναξιμένης ἥλων δίκην καταπεπηγέναι<sup>5</sup> τῷ κρυσταλλοειδεῖ.
- 4 ἔνιοι δὲ πέταλα εἶναι πύρινα<sup>6</sup>, ὥσπερ ζωγραφήματα.

S 1.24.1b, which we have placed at A 2.13.2\*) and the anonymous doxa to Anaximenes, as suggested by Kirk-Raven-Schofield and Lloyd (see above n. 296).

- 
- 1 σχήματος EP<sup>2</sup>  
 2 οἱ μὲν ἄλλοι S  
 3 καθάπερ τὸν κόσμον καὶ ἥλιον καὶ σελήνην om. S, καὶ σελήνην om. E  
 4 δέ S, cf. T, om. PGQ (lemma totum defuit in E)  
 5 καταπεπηγμένων EQ, καταπεπηγένους corr. Stephanus, prob. Mras  
 6 πύρινα εἶναι E, πύρινα om. Q
- 

§1 *SVF* 2.681; §2 *SVF* 1.508; §§3–4 13A14 DK

#### 14. On the shapes of the stars

- 1 The Stoics (declare that) the stars are ball-like, just like the cosmos, the sun and the moon.  
 2 Cleanthes (declares that they are) cone-like.  
 3 Anaximenes (declares that they) have been affixed to the crystalline (heaven).  
 4 But some (philosophers declare that they) are fiery leaves, like pictures.

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Aristotle** *Cael.* 2.8 290a7, ἔτι δ' ἐπεὶ σφαιροειδῇ τὰ ἄστρα, καθάπερ οἱ τ' ἄλλοι φασι καὶ ἡμῖν ὁμολογούμενον εἰπεῖν; 2.11 291b11, 23, τὸ δὲ σχῆμα τῶν ἄστρον ἐκάστου σφαιροειδὲς μάλιστ' ἂν τις εὐλόγως ὑπολάβοι ... ὥστ' εἴπερ ἐν τοιοῦτον, δῆλον ὅτι καὶ τᾶλλα ἂν εἴη σφαιροειδῇ. **Athenaeus** *Deipn.* 489D, ἔχει γὰρ (sc. τὸ τοῦ Νέστορος ποτήριον) καὶ ἀστέρας, οὓς ἥλοις ὁ ποιητῆς (*Il.* 11.633) ἀπεικάζει διὰ τὸ τοὺς ἀστέρας περιφερεῖς εἶναι τοῖς ἥλοις ὁμοίως καὶ ὡς (ἥλους) ἐμπεπηγῆναι τῷ οὐρανῷ, καθὼς καὶ Ἄρατός φησιν ἐπ' αὐτῶν· οὐρανῷ αἰὲν ἄρηρεν ἀγάλματα νυκτὸς ἰούσης (*Phaen.* 453). **Plotinus** *Enn.* 2.3.7.4, ἔστω (sc. τὰ ἄστρα) τοίνυν ὥσπερ γράμματα ἐν οὐρανῷ γραφόμενα αἰεὶ ἢ γεγραμμένα καὶ κινούμενα ... **Isidore of Pelusium** *Ep.* 4.58, see above ch. 13 sect. 6. **Johannes Philoponus** in *Ph.* 219.18 (see above ch. 13). **Simplicius** in *Cael.* 452.9–14, μετὰ τὴν ἐκ διαφρέσεως ἀπόδειξιν τὴν περὶ τῆς κινήσεως ἢ τῆς ἀκινήσεως τῶν ἄστρον ἄλλον τρόπον ἀποδείξεως ἐπάγει περὶ τοῦ μὴ κινεῖσθαι τὰ ἄστρα ὑποθέμενος αὐτὰ σφαιροειδῇ εἶναι καὶ νῦν μὲν τὸ πιθανὸν τῆς ὑποθέσεως πιστούμενος ἔκ τε τῆς τῶν ἄλλων δόξης οὕτως οἰομένων περὶ αὐτῶν καὶ ἐκ τοῦ δεῖν τῆς αὐτῆς οὐσίας ὄντας αὐτοὺς τῷ οὐρανίῳ σώματι καὶ σχῆμα τὸ αὐτὸ ἔχειν ...

Aëtius *Placita* 2.15  
Περὶ τάξεως ἀστέρων

WITNESSES

Ps.Plutarch 2.15, Eusebius 15.46, ps.Galen 57, Qusṭā Ibn Lūqā 2.15  
Stobaeus 1.24.1eghl, 2abe  
Cf. Achilles 16, Philo *Somm.* 1.21

ANALYSIS

1. A now moves on to the subject of the disposition or ordering of the heavenly bodies. From the contents of the chapter it becomes quite clear that the term ἀστέρες designates all the heavenly bodies, i.e. both stars and planets.<sup>301</sup> The present chapter is exactly parallel to ch. 7 on the order of the cosmos and, less precisely, to P 3.11 on the placement of the earth. As we shall see below, the text itself indicates that the subject falls in the Aristotelian category of disposition (κείσθαι).<sup>302</sup>

2. For this chapter P records six doxai:

ιε'. Περὶ τάξεως ἀστέρων

- P2.15.1 Ξενοκράτης κατὰ μᾶς ἐπιφανείας οἴεται κινεῖσθαι τοὺς ἀστέρας.  
P2.15.2 οἱ δ' ἄλλοι Στωικοὶ πρὸ τῶν ἐτέρων τοὺς ἐτέρους ἐν ὕψει καὶ βάθει.  
P2.15.3 Δημόκριτος τὰ μὲν ἀπλανῆ πρῶτον, μετὰ δὲ ταῦτα τοὺς πλανήτας, ἐφ' οἷς ἥλιον φωσφόρον σελήνην.  
P2.15.4 Πλάτων μετὰ τὴν τῶν ἀπλανῶν θέσιν πρῶτον φαίνοντα λεγόμενον τὸν τοῦ Κρόνου, δεύτερον φαέθοντα τὸν τοῦ Διός, τρίτον πυρόεντα τὸν τοῦ Ἄρεος, τέταρτον ἑωσφόρον τὸν τῆς Ἀφροδίτης, πέμπτον στίλβοντα τὸν τοῦ Ἑρμοῦ, ἕκτον ἥλιον, ἑβδομον σελήνην.  
P2.15.5 τῶν μαθηματικῶν τινὲς μὲν ὡς Πλάτων, τινὲς δὲ μέσον πάντων τὸν ἥλιον.  
P2.15.6 Ἀναξίμανδρος καὶ Μητροδόωρος ὁ Χίος καὶ Κράτης ἀνωτάτω μὲν πάντων τὸν ἥλιον τετάχθαι, μετ' αὐτὸν δὲ τὴν σελήνην, ὑπὸ δ' αὐτοῦς τὰ ἀπλανῆ τῶν ἀστρον καὶ τοὺς πλανήτας.

<sup>301</sup> See our comments above in n. 272.

<sup>302</sup> On this chapter see the detailed analysis by Laks (1997) 246–254. His reconstruction agrees with ours, but there are some differences in interpretation to be discussed below.

The title for this chapter is undisputed. The same six doxai are copied out in E and Q, with some interesting textual variants. For example, E uses the accusative form Φαίνωνα for Saturn instead of Φαίνοντα, which is also found in S (Q's reading is unclear). He also omits the adversatives δέ in the second lemma and the first of the two in the sixth lemma. G leaves out the second and last lemmata in his paraphrase. His most interesting reading is Ξενοκράτης for the name-label of the opening lemma. This should be seen as a *Verschlimmbesserung*, perhaps prompted by chronological considerations (not by the difficult οἱ δ' ἄλλοι Στωικοί, to which we shall return below, for he leaves that lemma out).

3. S preserves all six of P's doxai, but his method scatters them to five different locations within the one chapter. The evidence is all located in his ch. 24.

- 1.24 title    Περὶ οὐσίας ἄστρον καὶ σχημάτων, κινήσεώς τε καὶ ἐπισημασίας  
 1.24.1c  
 S1            Δημόκριτος  
               —καὶ πρῶτα τὰ μὲν ἀπλανῆ πρῶτον, μετὰ δὲ ταῦτα τοὺς  
               πλανήτας.  
 1.24.1g  
 S2            Ἀναξίμανδρος  
               —καὶ ἀνωτάτω μὲν πάντων τὸν ἥλιον τετάχθαι, μετ' αὐτὸν δὲ  
               τὴν σελήνην· ὑπὸ δ' αὐτοὺς τὰ ἀπλανῆ τῶν ἄστρον καὶ τοὺς  
               πλανήτας.  
 1.24.1h  
 S3            Μητροδώρος ὁμοίως περὶ σχήματος τῶν ἀστέρων καὶ αὐτὸς  
               ἀπεφίγητο.  
 1.24.1l  
 S4            Πλάτων  
               —καὶ πρῶτον μετὰ γε τὴν τῶν ἀπλανῶν θέσιν φαίνωνα λεγόμενον  
               τὸν τοῦ Κρόνου, δεύτερον φαέθοντα τὸν τοῦ Διός, τρίτον  
               πυρόεντα τὸν τοῦ Ἄρεος, τέταρτον ἑωσφόρον τὸν τῆς Ἀφροδίτης,  
               πέμπτον σίλβωνα τὸν τοῦ Ἑρμοῦ, ἕκτον ἥλιον, ἕβδομον σελήνην.  
 1.24.2a  
 S5            Ξενοκράτης κατὰ μᾶς ἐπιφανείας οἶεται κείσθαι τοὺς ἀστέρας.  
 S6            οἱ δὲ ἄλλοι Στωικοὶ πρὸ τῶν ἐτέρων τοὺς ἐτέρους ἐν ὕψει καὶ  
               βάθει.  
 1.24.2b  
 S7            τῶν μαθηματικῶν τινὲς μὲν ὡς Πλάτων φασὶν εἶναι τὴν τάξιν τῶν  
               ἀστέρων, τινὲς δὲ μέσον πάντων τὸν ἥλιον.  
 1.24.2c  
 S8            Παρμενίδης πρῶτον μὲν τάττει τὸν ἔϕον, τὸν αὐτὸν δὲ νομιζόμε-  
               νον ὑπ' αὐτοῦ καὶ ἔσπερον, ἐν τῷ αἰθέρι· μεθ' ὃν τὸν ἥλιον, ὕψ' ᾧ  
               τοὺς ἐν τῷ πυρώδει ἀστέρας, ὅπερ οὐρανὸν καλεῖ.

Although this looks complicated, it is not difficult to reconstruct what the anthologist did. As noted in Vol. I:220, he begins with the name-labels in A 2.13 and S1-2-4 are taken up in clusters based on that chapter. However, his method of coalescence constrains him to split up P's 6th lemma into separate doxai for Anaximander and Metrodorus (while Crates falls away entirely), thereby creating a separate S3. But in this process he makes a mistake and says that Metrodorus had the same opinion *περὶ σχήματος τῶν ἀστέρων*, which of course should have been *περὶ τάξεως*. The words *καὶ αὐτὸς ἀπεφώνητο* are of course added by S himself to facilitate the separation. Diels at first missed this and printed the lemma as part of P 2.14, but later noted his error in the *Addenda* (see *DG* 853). S then moves to A 2.15 and writes out the first two lemmata as S5–6. The next lemma that remains is S7, which is placed in the cluster of astronomers at 2b. He next interposes lemmata from A 2.14 and 2.16. The only lemma that remains is S8, which is then written out. There can be little doubt that it was originally placed in A 2.15. It is the only lemma not found in P. Its treatment in the process of coalescence also strongly suggests that it was placed last in the chapter, but this needs to be further examined in our analysis. On the important textual divergence between P and S in the Xenocratean lemma, see sect. 5 below.

4. T does not make use of this chapter. There is a chapter in Ach entitled *Τάξις τῶν ζ' σφαιρῶν* which shows some similarities to A, but which Diels did not include at the foot of his text:

*Isagoge* 16, 42.25–43.4 Maass ~ 23.6–15 Di Maria

- Ach1 οἱ περὶ τὰ μετέωρα δεινοὶ φασὶ ζώνας τινὰς εἶναι ἑπτὰ, δι' ὧν  
φέρεσθαι τοὺς ἑπτὰ ἀστέρας, καὶ ἐν μὲν τῇ ὑψηλοτάτῃ φέρεσθαι  
τὸν τοῦ Κρόνου, ἐν δὲ τῇ μετ' αὐτὴν τὸν τοῦ Διός, καὶ ἐν τῇ τρίτῃ  
τὸν τοῦ Ἄρεος, ἐν τῇ τετάρτῃ τὸν τοῦ ἡλίου, ἐν τῇ πέμπτῃ τὸν τῆς  
Ἀφροδίτης, ἐν δὲ τῇ ἕκτῃ τὸν τοῦ Ἑρμοῦ, ἐν δὲ τῇ ἑβδόμῃ τὸν τῆς  
σελήνης.
- Ach2 τινὲς δὲ ἐν τῇ τετάρτῃ τὴν Ἀφροδίτην λέγουσιν, ἐν τῇ πέμπτῃ δὲ  
τὸν Ἑρμῆν, ἐν δὲ τῇ ἕκτῃ τὸν ἥλιον.
- Ach3 ἄλλοι δὲ τέταρτον τὸν Ἑρμῆν, ἕκτην δὲ τὴν Ἀφροδίτην, μέσον δὲ  
τὸν ἥλιον.
- Ach4 εἰσὶ δὲ οἱ πρῶτον τὸν ἥλιον λέγουσιν, δευτέραν δὲ τὴν σελήνην,  
τρίτον δὲ τὸν Κρόνον.  
ἡ δὲ πλείων δόξα, καθ' ἣν πρώτη ἡ σελήνη ἐπεὶ καὶ ἀπόσπασμα  
τοῦ ἡλίου λέγουσιν αὐτήν, ὥς καὶ Ἑμπεδοκλῆς  
κυκλωτέρως περὶ γαῖαν ἐλίσσεται ἀλλότριον φῶς.



περὶ δὲ τῆς ἑναρμονίου κινήσεως αὐτῶν εἶπεν, ὡς ἔφην (cf. § 15),  
 Ἐρατος ἐν τῷ Κανόνι καὶ Ἐρατοσθένης ἐν τῷ Ἑρμῇ καὶ Ὑψικλῆς  
 καὶ Θράσυλλος καὶ Ἀδραστος Ἀφροδισιεύς. ἤρξαντο δὲ τοῦ  
 λόγου τούτου οἱ Πυθαγορικοί· πάντα γὰρ ἁρμονίαι καὶ τάξει  
 λέγουσι κινεῖσθαι, καθὰ καὶ ἰατροὶ τοὺς σφυγμούς, καὶ ὑγιαίνειν  
 μὲν, ὅταν εὐτακτῶσι, νοσεῖν δέ, ὅτε ἀτάκτως κινοῦνται.

The four doxai are all presented anonymously. They differ from A in that only the planetary circuits are considered, without any reference to the fixed stars. We shall return to this evidence further below. We note again Ach's citation of a proof-verse from Empedocles. The subject of the harmony of the spheres is not discussed in A. Ach's report illustrates the close connection between the questions of the heavenly bodies' τάξις and κίνησις.

Another related text based on the anterior doxographical tradition is found in Philo's summary of subjects at *Somn.* 1.21 3.209.12–14 C–W:

τί δ'; ἡ ἀπλανὴς καὶ ἐξωτάτω σφαῖρα πρὸς τὸ ἄνω βάθος ἔχει ἢ αὐτὸ μόνον  
 ἐστὶν ἐπιφάνεια βάθους ἐρήμη, τοῖς ἐπιπέδοις σχήμασιν ἐοικυῖα;

This diaeresis focuses on the outer sphere of heaven, but the contrast is closely related to the first two doxai in A (as found in P) and must in fact be presumed by them. We note also that two terms are held in common: βάθος and ἐπιφάνεια. Exactly the same contrast is also found as a *quaestio* in Seneca (text below).

5. Seven doxai are preserved, and once again there is no reason to think that the chapter as we have it is not complete. It appears to fall into two distinct parts. The first discusses the disposition or movement of the ἀστέρες. One can hardly doubt that the fixed stars are meant, as suggested by material in Philo.<sup>303</sup> It follows on quite naturally from A 2.13–14\*, and especially from the distinction in the doxa of Empedocles at A 2.13.2\*. The subject of this part would then be the placement of the stars in the outer heavenly sphere, Xenocrates placing all the stars in a single plane,<sup>304</sup> whereas the Stoics allow for three-dimensional

<sup>303</sup> *Contra* Zeller (1920–1923) 2.1.1025 n. 1, who argued that only the planets are meant, i.e. Xenocrates is following Plato who placed the planets in the single plane of the ecliptic, and Isnardi-Parente (1982) 379–380, who notes that G records the name Xenophanes and toys with the idea that an older Presocratic view is preserved here (indeed Xenocrates occurs only here in Book II).

<sup>304</sup> That it should be curved is no objection, as is clear from Philo *Somn.* 1.21.

placement. We can compare a text in Geminus which puts forward exactly the same contrast, though not in a doxographical context (text below). It can also be related to the question of whether the heavenly bodies have voluntary or involuntary movement, which is found in Philo (see ch. 13 sect. 5) but not in A.

Two additional textual problems must be discussed. (1) In the first doxa P and his tradition read *κινεῖσθαι*, S *κεῖσθαι*. The verb is located at the beginning of the chapter and so is no doubt carefully chosen. *κεῖσθαι* certainly agrees with the concept of *τάξις* in the title, whereas *κινεῖσθαι* obviously fits better with the following chapter *Περὶ ... κινήσεως*. Moreover it is important to note that *κεῖσθαι* is one of the Aristotelian categories, which are proving to be vital for understanding the structure of the book as a whole. Alexander appears to have understood this when he uses an example of the relative positions of the sun and Venus as an example of a comparative question *κατὰ τὸ κεῖσθαι* (text below). We note too that exactly the same textual problem occurs in the parallel at Aristotle, *Cael.* 2.10 291a30, where *κεῖται* is clearly to be preferred. (2) The name-label for the second doxa is οἱ δὲ ἄλλοι Στωικοί. Does this mean that A regards Xenocrates as a proto-Stoic? We might compare a text from A 1.3 at S 1.1.29b 37.2 Wachsmuth: ταῦτα δὲ χορηγήσας τοῖς Στωικοῖς τὰ πρότερα παρὰ τοῦ Πλάτωνος μεταπέφρακεν. It is more likely in fact that A is using a common Greek idiom here, as suggested by Mras,<sup>305</sup> and that we should translate ‘but others, the Stoics ...’ But it is also possible that the word Στωικοί is a gloss, for A does not appear to use the idiom elsewhere.

The second topic follows on from the first. If the heavenly bodies are not all on the same plane, then they must be ordered in some way. A now discusses the sequence of the heavenly bodies, in which an explicit distinction is assumed between the fixed stars and the planets. If the five remaining doxai are examined, we can see that the first three postulate that the fixed stars are first, followed by the planets in three different sequences, whereas the last two have some of the planets first, followed by the fixed stars and other planets. An implicit diaeresis may be assumed.<sup>306</sup> The first group of three doxai of course rep-

<sup>305</sup> See apparatus to Eus. *PE* 15.46; for the idiom cf. Smyth (1956) §1272. Other suggestions at Laks (1997) 247 n. 38, who exaggerates the difficulty of the addition of *δέ*.

<sup>306</sup> As can be seen in the diagram on p. 258, Laks (1997) agrees on the distinction, but regards the final two lemmata as representing ‘other dispositions’ which are ‘heretical’ or ‘dissident’.

resents the majority position in ancient cosmology, but it is not presented as clearly as it might have been. The view of Democritus which comes first is idiosyncratic.<sup>307</sup> Perhaps its main function is to introduce the view that the fixed stars come first in the order of the heavenly bodies, followed by the planets, and the actual order of the planets is less important. The next two doxai assume the classic opposition between the Pythagorean–Platonic (or Egyptian) order (sun second-last next to the moon) and the Chaldean order (sun in the middle position).<sup>308</sup> Plato of course follows the Pythagorean order in the *Timaeus* (cf. 38e) and this is attributed to him here, although in greater detail than is to be found in the Platonic source.<sup>309</sup> The opposition between the two systems in fact provides the clue to the division in the ranks of the μαθηματικοί (i.e. the astronomers)<sup>310</sup> in §5. But A does not develop it into the central distinction. The division of opinion is much more clearly presented by Macrobius and Proclus in their commentary on Cicero and Plato respectively (the latter’s description τινὲς τῶν μαθηματικῶν at *in Ti.* 3.62.6 is parallel to our doxography; see the texts below).

The second part of the diaeresis, which assumes the primitive view that the fixed stars were not furthest from the earth, goes back to the very early history of Greek astronomy. A is not interested in the historical aspect, but rather in the fact that it represents an alternative point of view.<sup>311</sup> The place at the end of the chapter is indicative of the

<sup>307</sup> The formulation is also curious, because it uses the term ‘planet’ for Saturn, Jupiter, Mars and Mercury, and then refers to the sun, Venus and the moon by name, as if they were not planets. On the relation of this doxa to other reports on Democritus’ astronomy see Lachenaud *ad loc.*

<sup>308</sup> The Chaldean order gradually takes over after 200 BCE. On the more general question of the ordering of stars and planets (including discussions of this chapter) see Boll (1912) 2565–2570, Heath (1913) 107, Gundel & Gundel (1950) 2100, Van der Waerden (1988) 52.

<sup>309</sup> A includes the names Φαίνων, Φαέθων, Πυγοεῖς and Στῖλβον, which are post-Platonic; cf. ps.Arist. *De mundo* 2, 392a.24–27, who uses the modern names, but retains the Pythagorean–Platonic order also followed by Aristotle. On these names see further Pease *ad Cic. N.D.* 2.52–53.

<sup>310</sup> They occur six times in Book II; outside it only at A 4.14 ~ S 1.52.16 and P 5.18.6 (where the term refers to astrologers). Aristarchus and Seleucus are called μαθηματικός at A 1.15 ~ S 1.16.1 and P 3.17.5 respectively. On the use of the term going back to Aristotle see further Part. I, sect. 8 at n. 230. See also the brief overview of μαθηματικοί in Aëtius given by Zhmud (2006) 296–297.

<sup>311</sup> As Laks (1997) 252 notes, it is surprising that the early Presocratic Anaximander is linked to two later philosophers Metrodorus of Chios and Crates of Mallos. Laks argues that the end of the chapter is used for heretical or dissident views (as

artificiality of the procedure from the historical point of view. It should also be noted that A exploits the possibility of making links between the doxai. There is a clear associative transition from §5b where the sun is in the middle (cf. Philo *Her.* 224) to §6 where the sun is at the cosmos' outer edge.

The evidence from Ach is yet to be considered. Unlike what we find in A, only the planetary circuits, without reference to the fixed stars, are considered. Four positions are given. The Chaldean order is attributed to 'those who are expert in astronomy', which clearly indicates the majority position (but note that the 'modern' names are not given). There then follow three other doxai attributed to anonymi: the first is the Pythagorean-Platonic order, the other two are reminiscent of Democritus and Anaximander in A, without being quite the same:

- |     |     |                  |  |
|-----|-----|------------------|--|
| (1) | A   | Democritus       | sun, Venus, moon                       |
|     | Ach | third doxa       | 4th Mercury, 6th Venus, in between sun |
| (2) | A   | Anaximander etc. | sun, moon, stars-planets               |
|     | Ach | fourth doxa      | sun, moon, Saturn                      |

It would appear that Achilles has combined two genres here: first he draws on a straight handbook, such as those of Cleomedes or Geminus, which contains no diaereses or alternative views;<sup>312</sup> he then takes alternative views from a doxographical source in the same tradition as A. The words that follow, ἡ δὲ πλείων δόξα, καθ' ἣν πρώτη ἡ σελήνη, must derive from yet another source, since first must here mean 'closest to the earth'.

In summary, then, the chapter discusses two separate themes which fall under its subject matter. In the first part on the placement of the fixed stars there is a single type A diaeresis presenting two opposed views. The second part is also divided in a type A diaeresis, with the relation between the fixed stars and the planets as the point of division. These two positions are then further sub-divided.

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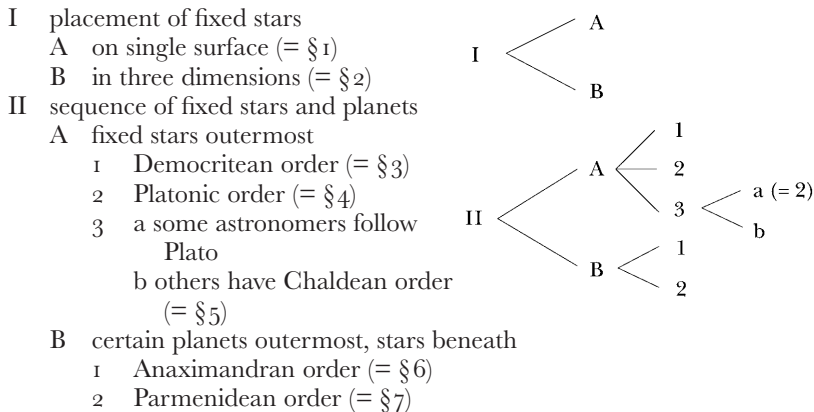
certainly occurs elsewhere, e.g. in ch. 20). We prefer to see the final two lemmata as opposed to the earlier views where the fixed stars are outermost. We also do not agree with Laks that there is any kind of movement towards the 'truth' (p. 253) in the chapter and have not introduced an arrow such as he places in his diagram on p. 258.

<sup>312</sup> But Maass' gloss 'e Posidonio, cf. Geminus, Cleomedes', is no more than a guess. See also on these passages Mette (1936) 53–55, who argues that A made a slight mistake in linking Crates to Anaximander and Metrodorus.

6. The dialectical-doxographical parallels offer some further observations. Firstly both Aristotle and Posidonius point to the role of astronomers in the specific question of the τάξις τῶν οὐρανίων. The doxographical tradition has recognized them as a separate group. Secondly we have a tantalizing report of Eudemus on these questions, i.e. a very old Peripatetic source. It fails, however, to correspond to A at all closely. In A Anaximander is the oldest philosopher to have a view on the order of the heavenly bodies (though the priority is not explicitly stated), whereas in Eudemus he is the first on distances and sizes (see below on 2.21.1\* etc.). Eudemus emphasizes the role of the Pythagoreans in determining the order of the planets (cf. the Philolaic doxa above at 2.7.6\*). But in the current chapter the Pythagoreans are conspicuous by their absence.

Finally it is noteworthy that the difference of opinion between the Pythagorean and the Chaldean order is explicitly mentioned by Ptolemy in the *Almagest* (text below). He seldom indulges in anything that resembles doxography, but may have wished to mention the division of opinion because he believes it cannot be definitively resolved. As a scientist he is not interested in superseded views, so in a sense he can be seen as the very opposite of our doxographer. It is also characteristic that he does not mention any names, even though it would not have been difficult for him to do so.<sup>313</sup>

STRUCTURE (see above sect. 5)



<sup>313</sup> On this Ptolemaic passage see Neugebauer (1975) 2.690–693 and the comments of Toomer (1984) 419.

## RECONSTRUCTED TEXT

ιε'. Περὶ τάξεως ἀστέρων

- 1 Ξενοκράτης<sup>1</sup> κατὰ μιᾶς ἐπιφανείας<sup>2</sup> οἶεται κεῖσθαι<sup>3</sup> τοὺς ἀστέρας.
- 2 οἱ δ' ἄλλοι Στωικοὶ<sup>4</sup> πρὸ τῶν ἐτέρων τοὺς ἐτέρους<sup>5</sup> ἐν ὕψει καὶ  
βάθει.
- 3 Δημόκριτος τὰ<sup>6</sup> μὲν ἀπλανῆ πρῶτον, μετὰ δὲ ταῦτα τοὺς πλανήτας,  
ἐφ' οἷς ἥλιον φωσφόρον σελήνην<sup>7</sup>.
- 4 Πλάτων μετὰ τὴν τῶν ἀπλανῶν θέσιν πρῶτον φαίνονα<sup>8</sup> λεγόμενον  
τὸν τοῦ Κρόνου, δεύτερον φαέθοντα τὸν τοῦ Διός, τρίτον  
πυρόεντα τὸν τοῦ Ἄρεος, τέταρτον ἑωσφόρον<sup>9</sup> τὸν τῆς Ἀφροδίτης,  
πέμπτον στίλβοντα τὸν τοῦ Ἑρμοῦ, ἕκτον ἥλιον, ἑβδομον σελήνην.
- 5 τῶν μαθηματικῶν τινὲς μὲν ὡς Πλάτων, τινὲς δὲ μέσον πάντων τὸν  
ἥλιον.
- 6 Ἀναξίμανδρος καὶ Μητροδωρος ὁ Χῖος καὶ Κράτης ἀνωτάτω μὲν  
πάντων τὸν ἥλιον τετάχθαι, μετ' αὐτὸν δὲ<sup>10</sup> τὴν σελήνην, ὑπὸ δ'  
αὐτοὺς τὰ ἀπλανῆ τῶν ἄστρον καὶ τοὺς πλανήτας.
- 7 Παρμενίδης πρῶτον μὲν τάττει τὸν ἑῶν, τὸν αὐτὸν δὲ νομιζόμε-  
νον ὑπ' αὐτοῦ καὶ ἔσπερον, ἐν τῷ αἰθέρι· μεθ' ὃν τὸν ἥλιον, ὑφ' ᾧ  
τοὺς ἐν τῷ πυρώδει ἀστέρας, ὅπερ οὐρανὸν καλεῖ.

1 Ξενοφάνης G

2 κατὰ μίαν ἐπιφάνειαν E, cf. G (cum lectione κινεῖσθαι)

3 κινεῖσθαι P, κεῖσθαι S

4 οἱ δὲ ἄλλοι καὶ οἱ Στωικοί S<sup>2</sup>, δέ om. E

5 πρὸ τῶν ἐτέρων τοὺς ἐτέρους om. Q

6 πρῶτα μὲν τὰ ἀπλανῆ S

7 ἐφ' οἷς ἥλιον φωσφόρον σελήνην om. S

8 φαίνονα SEQ (?), φαίνοντα P

9 φωσφόρον Q

10 δέ om. E

§ 1 fr. 162 I.-P.; § 2 *SIF* 2.689; § 3 68A86 DK; § 4-; § 5-; § 6a 12A18; § 6b 70A19 DK;  
§ 6c fr. F5a Mette; § 7 28A40a DK

15. On the ordering of the heavenly bodies

- 1 Xenocrates thinks that the stars lie on a single plane.
- 2 But the others, the Stoics, (declare that) the ones are placed in front of  
the others in height and depth.
- 3 Democritus (orders) the fixed stars first, then after them the planets,  
followed by the sun, the light-bringer, and the moon.
- 4 Plato after the positioning of the fixed stars (orders) first the star of  
Kronos called 'the Shining one', second the star of Zeus (called) 'the

- Radiant one', third the star of Ares (called) 'the Fiery one', fourth the star of Aphrodite (called) 'Dawn-bringer', fifth the star of Hermes (called) the 'the Gleaming one', sixth the sun, and seventh the moon.
- 5 Of the astronomers some (order the heavenly bodies) as Plato does, others (place) the sun in the middle of all (the planets).
- 6 Anaximander and Metrodorus of Chios and Crates (declare that) the sun has been ordered highest of all (the heavenly bodies), but after it the moon, and below them the fixed stars and the planets.
- 7 Parmenides orders the Dawn-star, which is considered by him to be identical with the Evening-star, as first in the ether; after it the sun, beneath which he places the heavenly bodies (i.e. stars) in the fiery region, which he calls 'heaven'.

\*as in 2.13 we translate ἀστίη primarily with 'heavenly body'

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

For §§1–2: **Cicero** *N.D.* 2.54–55, nec habent (stellae) aetherios cursus neque caelo inhaerentes, ut plerique dicunt physicae rationis ignari; non est enim aetheris ea natura ut vi sua stellas complexa contorqueat, nam tenuis ac perlucens et aequabili calore suffusus aether non satis aptus ad stellas continendas videtur; habent igitur suam sphaeram stellae inerrantes ab aetheria coniunctione secretam et liberam. **Philo** *Somn.* 1.21, text above in sect. 4. **Geminus** *El. Astron.* 1.23, οὐ πάντας δὲ τοὺς ἀστέρας ὑποληπτέον ὑπὸ ἐπιφάνειαν κεῖσθαι, ἀλλ' οὓς μὲν μετεωροτέρους ὑπάρχειν, οὓς δὲ ταπεινότερους. **Seneca** *Nat.* 2.1.1, agatur an agat (sc. caelum), et infra sese sidera habeat an in contextu sui fixa (cf. further above 2.11). **Lactantius** *Div. Inst.* 3.3.4, nam causas naturalium rerum disquirere aut scire velle ... et stellae utrumne adharent caelo an per aerem libero cursu ferantur ... **Macrobius** *Comm. in somn. Scip.* 1.17.16, reliquas omnes (sc. stellas) alii infixas caelo nec nisi cum caelo moveri, alii, quorum adsertio vero propior est, has quoque dixerunt suo motu praeter quod cum caeli conversione feruntur accedere ...

For §§3–7: **Aristotle** *Cael.* 2.10 291a29, περὶ δὲ τάξεως αὐτῶν (sc. τῶν ἀστρον) ὃν μὲν τρόπον ἕκαστον κεῖται (v.l. κινεῖται) τῷ τὰ μὲν εἶναι πρότερα τὰ δ' ὕστερα, καὶ πῶς ἔχει πρὸς ἀλλήλα τοῖς ἀποστήμασιν, ἐκ τῶν περὶ ἀστρολογίαν θεωρεῖσθω λέγεται γὰρ ἱκανῶς. **Eudemus** *ap. Simp. in Cael.* 471.2–11 (commenting on the Aristotelian passage cited above), καὶ γὰρ ἐκεῖ (sc. ἐν τῇ ἀστρολογίᾳ, cf. *Arist. Cael.* 2.10 291a32) περὶ τῆς τάξεως τῶν πλανωμένων καὶ περὶ μεγεθῶν καὶ ἀποστημάτων ἀποδέδεικται Ἀναξίμανδρου πρώτου τὸν περὶ μεγεθῶν καὶ ἀποστημάτων λόγον εὐρηκός, ὡς Εὐδήμιος ἰστορεῖ τὴν τῆς θέσεως τάξιν εἰς τοὺς Πυθαγορείους πρώτους ἀναφέρειν. τὰ δὲ μεγέθη καὶ τὰ ἀποστήματα ἡλίου καὶ σελήνης μέχρι νῦν ἔγνωσται ἀπὸ τῶν ἐκλείψεων τὴν ἀφορμὴν τῆς καταλήψεως λαβόντα, καὶ εἰκὸς ἦν ταῦτα καὶ τὸν Ἀναξίμανδρον εὐρηκέναι, καὶ Ἑρμοῦ δὲ καὶ Ἀφροδίτης ἀπὸ τῆς πρὸς τούτους μεταπαραβολῆς, ὥνπερ τὰ μεγέθη καὶ τὰ ἀποστήματα ὑπὸ τῶν μετὰ Ἀριστοτέλην πλέον ἡκριβώθη καὶ τελεώτατα γε ὑπὸ τῶν περὶ Ἱππαρχον καὶ Ἀρίσταρχον καὶ Πτολεμαῖον. **Posidonius** cf. above ch. 11. **Philo** *Her.* 224, τὴν δὲ τῶν πλανήτων τάξιν ἄνθρωποι παγίως

μὴ κατειληφότες—τί δ' ἄλλο τῶν κατ' οὐρανὸν ἴσχυσαν κατανοῆσαι βεβαίως;—εἰκοτολογοῦσι, ἀριστα δ' ἐμοὶ στοχάζεσθαι δοκοῦσιν οἱ τὴν μέσσην ἀπονενεμηκότες ἡλίῳ τάξιν, τρεῖς μὲν ὑπὲρ αὐτὸν καὶ μετ' αὐτὸν τοὺς ἴσους εἶναι λέγοντες, ὑπὲρ αὐτὸν μὲν φαίνοντα, φαέθοντα, πυρόεντα, εἴθ' ἥλιον, μετ' αὐτὸν δὲ στίλβοντα, φωσφόρον, τὴν ἄερος γείτονα σελήνην. *Prov.* 2.73, distantiarum vero in tanta siderum multitudine apta proportio nos latet. **Ptolemy** *Synt. math.* 9.1, πρῶτον δὴ περὶ τῆς τάξεως τῶν σφαιρῶν αὐτῶν, αἵτινες καὶ αὐταὶ τὰς θέσεις ἔχουσιν ὡς περὶ τοὺς τοῦ λοξοῦ καὶ διὰ μέσων τῶν ζῳδίων κύκλου πόλους, τὸ μὲν πάσας τε περιγειότερας μὲν εἶναι τῆς τῶν ἀπλανῶν, ἀπογειότερας δὲ τῆς σεληνικῆς, καὶ τὸ τὰς τρεῖς τὴν τε τοῦ τοῦ Κρόνου μείζονα οὖσαν καὶ τὴν τοῦ τοῦ Διὸς ὡς ἐπὶ τὰ περιγειότερα δευτέραν καὶ τὴν τοῦ τοῦ Ἄρεως ὑπ' ἐκείνην ἀπογειότερας εἶναι τῶν τε λοιπῶν καὶ τῆς τοῦ ἡλίου σχεδὸν παρὰ πᾶσι τοῖς πρώτοις μαθηματικοῖς ὁρώμεν συμπεφωνημένα, τὴν δὲ τοῦ τῆς Ἀφροδίτης καὶ τὴν τοῦ τοῦ Ἑρμοῦ παρὰ μὲν τοῖς παλαιότεροις ὑποκάτω τιθεμένας τῆς ἡλιακῆς, παρὰ δὲ ἐνίοις τῶν μετὰ ταῦτα καὶ αὐτὰς ὑπερτιθεμένας ἔνεκεν τοῦ μηδ' ὑπ' αὐτῶν ἐπεσκοτῆσθαι ποτε τὸν ἥλιον. ἡμῖν δ' ἡ μὲν τοιαύτη κρίσις ἀβέβαιον ἔχειν δοκεῖ ... **Alexander of Aphrodisias** in *Tóp.* 218.8–19.1, κατὰ δὲ τὸ κείσθαι, ὅταν ζητῆται πότερος προσγειότερος, ὁ ἥλιος ἢ ὁ τῆς Ἀφροδίτης ἀστήρ; *ap. Simp. in Cael.* 474.14–18, ἀλλὰ τὸ μὲν τὴν τοῦ Ἑρμοῦ σφαῖραν ὑπὲρ τὴν Ἀφροδίτης εἵπειν ἢ γραφικὸν ἐστὶ παῖσιμα ἀντὶ Ἥλιου τὸν Ἑρμῆν ἔχον ἢ κατὰ τὴν τῶν παλαιῶν εἴρηται δόξαν, καθ' ἣν καὶ ὁ Πλάτων ἐν Πολιτείᾳ σφαιροποιεῖ λέγων ἕκτον μὲν ἄνωθεν τὸν τῆς Ἀφροδίτης δεύτερον ὄντα λευκότητι μετὰ τὸν Δία, ἔβδομον δὲ τὸν Ἥλιον καὶ ὀγδόην τὴν Σελήνην. **Lactantius** *Div. Inst.* 3.3.4, et stellae utrumne adhaerent caelo an per aerem libero cursu ferantur ... **Macrobius** *Comm. in somn. Scip.* 1.19.1, his adsertis de sphaerarum ordine pauca dicenda sunt, in quo dissentire a Platone Cicero videri potest ... Ciceroni Archimedes et Chaldaeorum ratio consentit, Plato Aegyptios omnium philosophiae disciplinarum parentes secutus est ... **Proclus** in *Ti.* 3.62.2–10, ἀλλ' οὖν ἡ τῶν παλαιῶν φήμη ταύτην ἐδίδου τῷ ἡλίῳ τὴν τάξιν· καὶ γὰρ Ἀριστοτέλης οὕτως ᾤετο καὶ οἱ ἀμφὶ τὸν Εὐδοξόν. εἰ δὲ τινες ταῖς τῶν μαθηματικῶν ὑποθέσει χαίροντες μέσον τῶν ἐπὶ τὰ πλανήτων τάπτειν ἄξιοιεν τὸν ἥλιον, συνάγοντα καὶ συνδέοντα τὰς ἐφ' ἐκάτερα αὐτοῦ τριάδας, ἴστωσαν μηδὲν ἔχουσαν μηδὲ αὐτοὺς τοὺς ἀπὸ τῶν μαθημάτων λέγοντας; cf. in *R.* 2.220–221. **Simplicius** in *Cael.* 470.29–71.2, τῷ περὶ τῶν οὐρανίων λέγοντι ἀναγκαῖον ἦν καὶ περὶ τῆς κατὰ τὴν θέσιν τάξεως τῶν τε σφαιρῶν καὶ τῶν ἀστέρων εἵπειν, τίνα μὲν πρότερα καὶ τῇ ἀπλανεῖ προσεχέστερα, τίνα δὲ ὕστερα καὶ περιγειότερα, καὶ ἔτι μέντοι πῶς ἔχει πρὸς ἄλληλα τοῖς ἀποστήμασι τοῖς ὡς πρὸς τὴν γῆν παραβαλλομένοις, ἐξ ὧν καὶ οἱ τῶν μεγεθῶν λόγοι καταλαμβάνονται. ταῦτα οὖν, φησίν, “ἐκ τῶν περὶ ἀστρολογίαν θεωρεῖσθω” (for continuation see under Eudemus above). **Johannes Tzetza** *Comm. in Arist. Nubes* 102 4.406 Holwerda, cf. above ch. 13 (includes θέσεις of stars).



## Aëtius *Placita* 2.16

### Περὶ τῆς τῶν ἀστέρων φορᾶς καὶ κινήσεως

#### WITNESSES

Ps.Plutarch 2.16, Eusebius 15.47, ps.Galen 58, Qusṭā Ibn Lūqā 2.16  
Stobaeus 1.24.1ck, 2bc, 5

#### ANALYSIS

1. The physical doxography now turns from the heavenly bodies' disposition to their motion. This chapter is directly parallel to P 3.13 Περὶ κινήσεως γῆς, less directly to the two chapters on the inclination of the cosmos (2.8) and the earth (P 3.12) and the chapter on the solstices of the sun (2.23).

2. P retains five lemmata:

ιζ'. Περὶ τῆς τῶν ἀστέρων φορᾶς καὶ κινήσεως

- P2.16.1 Ἀναξαγόρας Δημόκριτος Κλεάνθης ἀπ' ἀνατολῶν ἐπὶ δυσμὰς  
φέρεσθαι πάντας τοὺς ἀστέρας.  
P2.16.2 Ἀλκμαίων καὶ οἱ μαθηματικοὶ τοὺς πλανήτας τοῖς ἀπλανέσιν  
ἐναντίως, ἀπὸ γὰρ δυσμῶν ἐπ' ἀνατολὰς ἀντιφέρεσθαι.  
P2.16.3 Ἀναξίμανδρος ὑπὸ τῶν κύκλων καὶ τῶν σφαιρῶν, ἐφ' ὧν ἕκαστος  
βέβηκε, φέρεσθαι.  
P2.16.4 Ἀναξίμενης ὁμοίως ὑπὸ τὴν γῆν καὶ περὶ αὐτὴν στρέφεσθαι τοὺς  
ἀστέρας.  
P2.16.5 Πλάτων καὶ οἱ μαθηματικοὶ ἰσοδρόμους εἶναι τὸν ἥλιον τὸν  
ἑωσφόρον τὸν στίλβοντα.

The only variation in the title is found in G, who slightly abbreviates by leaving out the otiose noun φορά. Comparison with the other witnesses in the P tradition reveals a number of textual problems. The second doxa is longer in P than it is in EQ and G (who retains only the first two and the last doxa), adding ἐναντίως and the somewhat awkward γὰρ. The shorter version is to be preferred. More interesting are the differences in the fourth lemma. We should compare:

- P Ἀναξίμενης ὁμοίως ὑπὸ τὴν γῆν καὶ περὶ αὐτὴν στρέφεσθαι τοὺς  
ἀστέρας.  
E Ἀναξίμενης οὐχ ὑπὸ τὴν γῆν, περὶ αὐτὴν δὲ στρέφεσθαι τοὺς ἀστέρας.

Q Anaximenes glaubte, daß die Sterne sich oberhalb und unterhalb der Erde bewegen.

In deciding between these it is crucial to note that S supports E. There can be little doubt that their reading is correct, a conclusion that is only strengthened by the anonymous reference to the same view in Aristotle *Mete.* 2.1 354a30 (text cited below). The alternative views found in PQ are most likely the result of textual corruption, e.g. in response to the word οὐχ falling out. In the final lemma PS give ἑωσφόρος as the name of Venus, EG φωσφόρος (note that both are used in A 2.14\*). Here the former is to be preferred.

3. In the case of S we have to unravel more of his grand scheme of coalescence. The following doxai come into consideration for inclusion in this chapter:

- 1.24 title Περί οὐσίας ἄστρον καὶ σχημάτων, κινήσεώς τε καὶ ἐπισημασίας  
 1.24.1c  
 S1 Ἀναξάγορας  
 —ἀπ' ἀνατολῶν δὲ ἐπὶ δυσμὰς φέρεσθαι πάντας τοὺς ἀστέρας.  
 1.24.1k  
 S2 Ἀναξιμένης  
 —οὐχ ὑπὸ τὴν γῆν δὲ ἀλλὰ περὶ αὐτὴν στρέφεσθαι τοὺς ἀστέρας.  
 1.24.2b  
 S3 τῶν μαθηματικῶν τινὲς μὲν ὡς Πλάτων φασὶν ...  
 —ταῦτ' οὐδὲ πεπονθέναι τῷ ἑωσφόρῳ τὸν στίλβονα, ἰσοδραμεῖν  
 δὲ αὐτοὺς τῷ ἡλίῳ καὶ συμπεριφέρεσθαι αὐτῷ· καὶ τότε μὲν  
 προανατέλλοντα ἑωσφόρον φαίνεσθαι, τότε δὲ ἐπικαταδυόμενον  
 ἕσπερον καλεῖσθαι.  
 S4 —τοὺς δὲ πλανήτας τοῖς ἀπλανέσιν ἀπὸ δυσμῶν ἐπ' ἀνατολὰς  
 ἀντιφέρεσθαι.  
 τούτῳ δὲ συνομολογεῖ καὶ Ἀλκμαίων.  
 1.24.2c  
 S5 Ἀριστοτέλης δὲ ὑπὸ τῶν σφαιρῶν, ἐφ' ὧν ἕκαστος ἐμβέβηκε.  
 S6 καὶ Ἀναξίμανδρος ὑπὸ τῶν κύκλων καὶ τῶν σφαιρῶν, ἐφ' ὧν  
 ἕκαστος βέβηκε, φέρεσθαι.  
 1.24.5  
 S7 Ἀπολλόδωρος ἐν τῷ δευτέρῳ Περί θεῶν Πυθαγορείαν εἶναι τὴν  
 περὶ τοῦ τὸν αὐτὸν εἶναι φωσφόρον τε καὶ ἕσπερον δόξαν.

Some observations need to be made on S's technique in absorbing A's chapter.

- (a) In the case of S1 two of P's name-labels are quietly dropped because they do not fit into the redistribution of the lemmata.
- (b) S3–4 relate to P2 and P5. The manipulations are complex. He starts

with the latter doxa because the name-label combining astronomers with Plato is also found in A 2.15\*, allowing an easy coalescence. The text of the doxa is formulated differently than P and is also longer.<sup>314</sup> S<sub>4</sub> is then added, even though there is no association with Plato. But he still wants to include the name-label of Alcmaeon, so he adds *τούτῳ δὲ συνομολογεῖ καὶ Ἀλκμαίων*. Diels' method starts to break down here and he has to introduce a separate lemma in his reconstruction.<sup>315</sup>

- (c) The doxa of Anaximander was not included in the earlier cluster at 24.1g. The reason might be that S wanted to preserve the connection with Aristotle in the preceding doxa. P must have deleted the Aristotelian doxa because it added nothing to the doxa attributed to Anaximander.
- (d) The final lemma of the chapter, included above as S<sub>7</sub>, is difficult. Formally it differs from most lemmata in A. It is a report about a doxa rather than a direct attribution. There is only one other example in A where he refers explicitly to a doxa, at P 1.3.11, where Socrates and Plato are parenthetically said to have the same doxai on every subject. Diels regarded it as part of AD, as is clearly the case for the two preceding lemmata, presumably on stylistic grounds. But there is a problem with this identification, since the work *Περὶ θεῶν* belongs to the Athenian, not the Stoic Apollodorus. Moreover the subject matter is more likely to occur in A rather than AD. The balance of probability is that it derives from A, even though this is the only reference to the author in the *Placita*. It is another example of the tendency to attribute material to the venerable Pythagoras.<sup>316</sup> It is not a problem that the same doxa is found in the previous chapter attributed to Parmenides. They belong to the same Italian succession.
- (e) Despite initial appearances S does not lead us to question the order of the doxai as preserved in P. The Anaximenean doxa is brought forward through the process of coalescence. The Aristotelian doxa is additional and can be kept in its place preceding Anaximander.

4. Almost no other assistance would appear to be forthcoming. Because of S's fairly exhaustive efforts we may assume that A for the most part has been preserved, although it will have been very easy for a stray name-label or doxa to get lost. T ignores this chapter. Achilles too is of little assistance. His chapters *Περὶ ἀστέρος* (10) and *Περὶ πλανήτων* (15)

<sup>314</sup> The final part is joined on awkwardly (change of subject from *στίλβωνα* to *ἑωσφόρον*); it could be imported from somewhere else, but we have no way of knowing.

<sup>315</sup> It is worth noting that at 1.49.1a S uses a somewhat similar formula *ὁμοίως δὲ καὶ Ξενοκράτης*, which most likely goes back to A. So it is not impossible that S reveals the original text, and that P has coalesced.

<sup>316</sup> As Jacoby (1923–) IID.763 notes, *Πυθαγορείαν* means 'of Pythagoras' rather than 'Pythagorean' here. Cf. D.L. 9.123, where the discovery is disputed between Parmenides and Pythagoras (text below).

take the descriptive approach.<sup>317</sup> At the end of ch. 10 there is reference to the Pythagoreans' wish for both the planets and the fixed stars to have their own movement, which corresponds only weakly to the doxa on Alcmaeon and the astronomers in A (text below). Philo very briefly mentions the revolution (περιφορά) of the heavenly bodies as a subject for 'the investigator of the realities of nature' (*Somn.* 1.53, cf. ch. 11 sect. 4, ch. 13 sect. 5(3)).

5. In its organization the chapter strings together various subjects, using the customary antithetical approach, but in a not altogether tidy fashion.

(i) The first two doxai clearly constitute a pair. A has applied a διαφω-  
 νία which in effect amounts to a division between the Presocratic vortex cosmology and the 'modern' post-Platonic cosmology with concentric spheres. In the former there is no distinction between stars and planets,<sup>318</sup> in the latter they have opposite motions. The antithesis is brought out in the opposed directions, East to West versus West to East (in the second lemma it is not made explicit that the stars still move from East to West).

(ii) The next two doxai also form a pair. The only difference between them, it would seem, is that Aristotle's stars are borne along in spheres only, while Anaximander's have circles (the celebrated tubes of fire) and spheres. As Kahn notes,<sup>319</sup> the reference to spheres in the case of Anaximander is quite anachronistic. At *Cael.* 2.8 289b32 Aristotle speaks of the stars as being still and moving through being bound to circles (τὰ δὲ ἄστροι ἡρεμεῖν καὶ ἐνδεδεμένα τοῖς κύκλοις φέρεσθαι),<sup>320</sup> but

<sup>317</sup> Except for a reference to the Pythagoreans, who postulate a separate movement for both planets and stars. Closer to the subject-matter of this chapter is a scholion to Aratus, but no name-labels are used. See the texts cited in the dialectical-doxographical parallels below.

<sup>318</sup> I.e. the planets move in the same direction as the stars, only slower because they are further from the periphery; cf. the theory of Democritus at Lucretius 5.620ff. and also the reference to the δίνῃσις with regard to the sun's movement at A 2.23.3\*. The Cleanthean name-label makes no sense in this context and must involve some kind of corruption. Mansfeld (1992a) 100 argues creatively that the doxa originally may have been contrasted with the view that the heaven stood still and the earth moved, as attributed to the Pythagorean Hicetas of Syracuse at Cicero *Ac. pr.* 2.123. The origin of this fundamental diacresis is Aristotle's dialectical exposé at *Cael.* 2.8 289b1–34 (text cited below).

<sup>319</sup> Kahn (1960) 59. It is the only report on Anaximander that refers to the planets; cf. Couprie (2003) 224.

<sup>320</sup> Note the second verb, which is the same as the one used in A.

in 2.12 he assumes that they move in spheres (cf. 293a5–11, also *Metaph.* Λ 8). The doxa's intended contrast with the theory of Anaximander is clear enough. The text can easily be improved, both stylistically and with regard to content:

Ἀριστοτέλης ὑπὸ τῶν σφαιρῶν ἐφ' ὧν ἕκαστος ἐμβέβηκε, Ἀναξίμανδρος δὲ ὑπὸ τῶν κύκλων φέρεσθαι.

It would be rash, however, to emend the text so drastically against the combined evidence of S and P.

(iii) The next doxa attributed to Anaximenes makes sense as introducing a contrast with the previous doxa of his Milesian predecessor, i.e. the οὐχ ὑπὸ τὴν γῆν must be taken as a critical reference to Anaximander.<sup>321</sup> The same doxa is found in two other doxographical reports in Diogenes Laertius and Hippolytus: see the texts below. The opposition is reminiscent of the diaeresis on the motion of the cosmos which we postulated in A 2.2a\*.<sup>322</sup> As we shall see shortly, the change of verb from φέρεσθαι to στρέφεσθαι is significant.

(iv) A doxa on the concurrent movement of Venus and Mercury with the sun, attributed to Plato and the astronomers, amounts to a further development of § 2, i.e. not all the planets but a group of planets moving together. S connects them together, but A's sequence is more likely reflected in P. The comment on the identity of the morning and the evening star must be seen as another appended thought. The final doxa records (§ 7) adds a comment which ascribes this view to the earlier philosopher Pythagoras.

6. As often in the shorter chapters of this book A exhibits a remarkable economy of views in a small space. The chapter is structured through a series of antitheses involving type A diaereses. The first two doxai are clearly opposed. The third and fourth are also in opposition to each other, but not as clearly (see above). The fifth lemma forms an implicit contrast with its predecessor. The next doxa is developed from the second lemma and stands separately from the others, followed by a final additional comment. When we survey the phrasing of the doxai, we note that it is the verbs that do most of the work, indicating different types of movement.

<sup>321</sup> Agreeing with Diels that the reading of E is to be preferred.

<sup>322</sup> As noted in our discussion of this chapter, Diels suggested that the contrast there was between doxai of Anaximander and Anaximenes respectively.

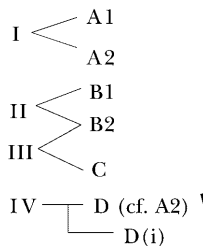
- § 1 φέρεσθαι  
 § 2 ἀντιφέρεσθαι  
 § 3 ὑπὸ τῶν σφαιρῶν φέρεσθαι  
 § 4 ὑπὸ τῶν κύκλων φέρεσθαι  
 § 5 στρέφεσθαι  
 § 6 συμπεριφέρεσθαι

Their effect is to move the chapter on, as indicated by the arrow in the diagram below. The systematic combination of opposition (caused by the diaeresis) and development (caused by association) is surely too neat to be accidental.

7. The *Eigenart* of A comes out well in this chapter. It is possible to find parallels for most of the doxai given (see texts below). Early evidence for dialectical thinking on the subject of the movements of the heavenly bodies is found in Aristotle *Cael.* 2.8.<sup>323</sup> But none of the sources share the characteristic way in which A arranges his material in terms of oppositions. The Epicurean material suggests that a similar chapter of an earlier version of the *Placita* was used by Epicurus. But he emphasizes the different causes involved, which are not considered in A's chapter.

STRUCTURE (see above sect. 6)

- I A1 stellar/planetary movement from E to W (= § 1)  
 A2 planetary movement only from W to E (= § 2)  
 II B1 stars moved by spheres (= § 3)  
 B2 stars moved by circles (under the earth) (= § 4)  
 III C stars circle around earth (contrast B2) (= § 5)  
 IV D three planets isodromic (= § 6)  
 D(i) additional comment on Venus (= § 7)



<sup>323</sup> See above n. 318.

## RECONSTRUCTED TEXT

ιζ'. Περὶ τῆς τῶν ἀστέρων φορᾶς καὶ<sup>1</sup> κινήσεως

- 1 Ἀναξαγόρας Δημόκριτος Κλεάνθης ἀπ' ἀνατολῶν ἐπὶ δυσμὰς  
φέρεσθαι πάντας τοὺς ἀστέρας.
- 2 Ἀλκμαίων καὶ οἱ μαθηματικοὶ τοὺς πλανήτας τοῖς ἀπλανέσιν ἀπὸ  
δυσμῶν<sup>2</sup> ἐπ' ἀνατολὰς ἀντιφέρεσθαι.
- 3 Ἀριστοτέλης ὑπὸ τῶν σφαιρῶν, ἐφ' ὧν ἕκαστος ἐμβέβηκε<sup>3</sup>,  
φέρεσθαι<sup>4</sup>.
- 4 Ἀναξίμανδρος ὑπὸ τῶν κύκλων καὶ τῶν σφαιρῶν<sup>5</sup>, ἐφ' ὧν ἕκαστος  
βέβηκε, φέρεσθαι.
- 5 Ἀναξίμενης οὐχ ὑπὸ τὴν γῆν περὶ αὐτὴν δέ<sup>6</sup> στρέφεσθαι τοὺς  
ἀστέρας.
- 6 Πλάτων καὶ οἱ μαθηματικοὶ ἰσοδραμεῖν τῷ ἡλίῳ<sup>7</sup> τὸν ἑωσφόρον<sup>8</sup>  
καὶ τὸν στίλβοντα καὶ συμπεριφέρεισθαι αὐτῷ· καὶ τότε μὲν  
προανατέλλοντα ἑωσφόρον φαίνεσθαι, τότε δὲ ἐπικαταδυόμενον  
ἔσπερον καλεῖσθαι.
- 7 Ἀπολλόδωρος ἐν τῷ δευτέρῳ Περὶ θεῶν Πυθαγορείαν εἶναι τὴν  
περὶ τοῦ τὸν αὐτὸν εἶναι φωσφόρον τε καὶ ἔσπερον δόξαν.

1 φορᾶς καὶ om. G

2 textus ES, cf. G, τοῖς ἀπλανέσιν ἐναντίως, ἀπὸ γὰρ δυσμῶν P

3 ἕκαστα συμβέβηκε S (testis unicus), ἕκαστος ἐμβέβηκε conj. Diels

4 φέρεσθαι om. S

5 καὶ τῶν σφαιρῶν fortasse delenda, vide supra

6 E, ὁμοίως ὑπὸ τὴν γῆν καὶ περὶ αὐτὴν P, οὐχ ὑπὸ τὴν γῆν δὲ ἀλλὰ περὶ αὐτὴν S

7 Φ ἰσοδρόμους εἶναι τὸν ἡλίον τὸν ἑωσφόρον καὶ τὸν στίλβοντα, S ταὐτὸν δὲ  
πεπονθέναι τῷ ἑωσφόρῳ τὸν στίλβοντα, ἰσοδραμεῖν δὲ αὐτοὺς τῷ ἡλίῳ καὶ συμ-  
περιφέρεισθαι αὐτῷ

8 PS ἑωσφόρον, EG φωσφόρον

§ 1a 59A78 DK; § 1b–; § 1c *SVF* 1.507; § 2a 24A4 DK; § 2b–; § 3 T19 Gigon; § 4 12A18  
DK; § 5 13A14 DK; § 6a–; § 6b–; § 7 *FGH* 244F91

16. On the displacement and movement of the heavenly bodies

- 1 Anaxagoras, Democritus and Cleanthes (declare that) all the heavenly  
bodies move from east to west.
- 2 Alcmaeon and the astronomers (declare that) the planets move in an  
opposite direction to the fixed stars from west to east.
- 3 Aristotle (declares that the heavenly bodies) are moved by the spheres,  
on which each of them has mounted.
- 4 Anaximander (declares that the heavenly bodies) are moved by the  
circles and the spheres on which each of them has mounted.

- 5 Anaximenes (declares that) the heavenly bodies whirl not beneath the earth but around it.
- 6 Plato and the astronomers (declare that) the ‘dawn-bringer’ (Venus) and the ‘gleaming one’ (Mercury) run a course equal to the sun and revolve together with it; and at one time it (Venus) appears when rising as the ‘dawn-bringer’, while at another time when setting it is called the ‘evening (star)’.
- 7 Apollodorus in the second (book) of his *On the gods* (declares that) the view that the ‘light-bringer’ and the ‘evening (star)’ are the same (heavenly body) is to be ascribed to Pythagoras.

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Aristotle** *Cael.* 2.8 289b1, ἐπει δὲ φαίνεται καὶ τὰ ἄστρα μεθιστάμενα καὶ ὅλος ὁ οὐρανός, ἀναγκαῖον ἦτοι ἡρεμούντων ἀμφοτέρων γίνεσθαι τὴν μεταβολήν, ἢ κινουμένων, ἢ τοῦ μὲν ἡρεμούντος τοῦ δὲ κινουμένου; *Mete.* 2.1 354a1, περὶ δὲ τοῦ τὰ πρὸς ἄρκτον εἶναι τῆς γῆς ὑψηλὰ σημείον τι καὶ τὸ πολλοὺς πεισθῆναι τῶν ἀρχαίων μετεωρολόγων τὸν ἥλιον μὴ φέρεσθαι ὑπὸ γῆν ἀλλὰ περὶ τὴν γῆν καὶ τὸν τόπον τοῦτον, ἀφανίζεσθαι δὲ καὶ ποιεῖν νύκτα διὰ τὸ ὑψηλὴν εἶναι πρὸς ἄρκτον τὴν γῆν. **Epicurus** *ap.* D.L. 10.92, τὰς τε κινήσεις αὐτῶν (sc. ἡλίου καὶ σελήνης καὶ τῶν λοιπῶν ἀστρῶν) οὐκ ἀδύνατον μὲν γίνεσθαι κατὰ τὴν τοῦ ὅλου οὐρανοῦ δίνην, ἢ τούτου μὲν στάσιν, αὐτῶν δὲ δίνην ...; cf. **Lucretius** 5.509–510, motibus astrorum nunc quae sit causa canamus. principio magnus caeli si vortitur orbis ...; 517–518, est etiam quoque uti possit caelum omne manere in statione, tamen cum lucida signa ferantur; 529–530, id doceo plurisique sequor disponere causas, motibus astrorum quae possint esse per omne. **Stoics** *ap.* D.L. 7.132 (on what is studied by both philosophers and astronomers), καθ’ ἣν ζητοῦσι περὶ τε τῶν ἀπλανῶν καὶ τῶν πλανωμένων, οἷον ... καὶ περὶ δινήσεως καὶ τῶν ὁμοίων τούτοις ζητημάτων. **Cicero** *Div.* 2.10 (on what diviners do not know), sol, luna quem motum habeat? quem quinque stellae, quae errare dicuntur? **Philo** *Somn.* 1.53, cited above in ch. 13 sect. 5. **Diogenes Laertius** 2.3 (on Anaximenes), κινεῖσθαι δὲ τὰ ἄστρα οὐχ ὑπὸ γῆν, ἀλλὰ περὶ γῆν; 9.23 (on Parmenides), καὶ δοκεῖ πρῶτος πεφωρακέναι τὸν αὐτὸν εἶναι Ἑσπερον καὶ Φωσφόρον, ὥς φησι Φαβωρίνος ἐν πέμπτῳ Ἀπομνημονευμάτων· οἱ δὲ Πυθαγόραν. **Hippolytus** *Ref.* 1.7.6 (doctrine of Anaximenes), οὐ κινεῖσθαι δὲ ὑπὸ γῆν τὰ ἄστρα λέγει, καθὼς ἔτεροι ὑπειλήφασιν, ἀλλὰ περὶ γῆν, ὥσπερ περὶ τὴν ἡμετέραν κεφαλὴν στρέφεται τὸ πλῖον. **Achilles** *Isag.* 10, 39.28–29 Maass ~ 19.18–21 Di Maria, οἱ δὲ Πυθαγόρειοι οὐ μόνον τοὺς πλάνητας ἀστέρας βούλονται ἰδίαν κίνησιν ἔχειν, ἀλλὰ καὶ τοὺς ἀπλανεῖς, οὕτω μέντοι κινεῖσθαι καὶ περὶ τὸν ἴδιον κυκλεῖσθαι κύκλον, ὥσπερ τοῦ παντὸς μὴ μεταβαίνοντος ἐτέρωθι, ἀλλὰ περὶ τὸν αὐτὸν τόπον εἰλουμένου; cf. **Schol. Arat.** 97.30–33, φέρεται δὲ ὁ οὐρανός ἀπὸ τῶν ἀνατολῶν ἐπὶ τὰς δυσμὰς, ὁ δὲ ἥλιος καὶ οἱ λοιποὶ πλάνητες τὴν ἐναντίαν, τουτέστιν ἀπὸ τῶν δυσμῶν ἐπὶ τὰς ἀνατολάς, ὥς εἶναι διπλὴν κίνησιν αὐτῶν γε, τὴν μὲν ἐρχομένων, τὴν δὲ φερομένων ... **Simplicius** in *Cael.* 444.18–45.2 (note references to Heraclides and Aristarchus).



*Aëtius Placita* 2.17

Πόθεν φωτίζονται οἱ ἀστέρες

*Aëtius Placita* 2.17a

〈Πόθεν τρέφονται οἱ ἀστέρες〉

#### WITNESSES

Ps.Plutarch 2.17, Eusebius 15.48, ps.Galen 59, Qusṭā Ibn Lūqā 2.17  
Stobaeus 1.24.11lm, 3

#### ANALYSIS

1. The doxography on the heavenly bodies now moves on to one of their chief characteristics, which was already assumed in the first chapter on their nature, namely that they gleam or shine. The verb φωτίζονται in the title corresponds to the noun in the chapter on the illuminations of the moon, ¶28 Περί φωτισμῶν σελήνης. The subject of the second part of the chapter on the source of the stars' nourishment, which as we shall see might be better regarded as a separate chapter, is exactly parallel to ¶5 Πόθεν τρέφεται ὁ κόσμος.

2. For this chapter P and his tradition preserve four lemmata:

ιζ'. Πόθεν φωτίζονται οἱ ἀστέρες

P2.17.1 Μητρόδωρος ἅπαντας τοὺς ἀπλανεῖς ὑπὸ τοῦ ἡλίου προσλάμπεσθαι.

P2.17.2 Ἡράκλειτος καὶ οἱ Στωικοὶ τρέφεσθαι τοὺς ἀστέρας ἐκ τῆς ἐπιγείου ἀναθυμιάσεως.

P2.17.3 Ἀριστοτέλης μὴ δεῖσθαι τὰ οὐράνια τροφῆς· οὐ γὰρ φθαρτὰ ἀλλ' αἰδία.

P2.17.4 Πλάτων οἱ Στωικοί, ὥς ὅλον τὸν κόσμον, καὶ τὰ ἄστρα ἐξ αὐτῶν τρέφεσθαι.

E preserves P's chapter in its entirety and introduces us to three significant variants. In P1 he adds the noun ἀστέρας, which is supported by G (this is the only lemma which he records) and apparently by Q (it is also present in S). Diels was probably right in taking it over, even if it is not strictly necessary (since it is included in the chapter title).

On the other hand E's καταλάμπεσθαι instead of προσλάμπεσθαι is not supported by G and should be ignored. In P<sub>4</sub> P has two name-labels, Plato and the Stoics, standing side by side. But the mention of the Stoics contradicts P2. E's reading κοινῶς instead of οἱ Στωικοί ὥς, supported by Q, is much to be preferred.<sup>324</sup>

3. Analysis of S's chapter on the heavenly bodies reveals that he preserves six lemmata:

- |            |  |
|------------|--|
| 1.24 title | Περὶ οὐσίας ἄστρον καὶ σχημάτων, κινήσεώς τε καὶ ἐπισημασίας                         |
| 1.24.li    |  |
| S1         | Παρμενίδης καὶ Ἡράκλειτος<br>—τρέφεσθαι δὲ τοὺς ἀστέρας ἐκ τῆς ἀπὸ γῆς ἀναθυμιάσεως. |
| 1.24.li    |  |
| S2         | Πλάτων<br>—κοινῶς δὲ τὸν κόσμον ὅλον καὶ τὰ ἄστρα ἐξ αὐτοῦ τρέφεσθαι.                |
| 1.24.im    |  |
| S3         | Ἀριστοτέλης<br>—μὴ δεῖσθαι δὲ τὰ οὐράνια τροφῆς, οὐ γὰρ φθαρτὰ ἀλλ' αἰδία εἶναι.     |
| 1.24.3     |  |
| S4         | Μητροδόωρος ἅπαντας τοὺς ἀπλανεῖς ἀστέρας ὑπὸ τοῦ ἡλίου προσλάμπεσθαι.               |
| S5         | Στράτων καὶ αὐτὸς τὰ ἄστρα ὑπὸ τοῦ ἡλίου φωτίζεσθαι.                                 |
| S6         | Διότιμος Τύριος, ὁ Δημοκρίτειος, τὴν αὐτὴν τούτοις εἰσηγέγκατο γνώμην.               |

P's four lemmata can be recognized in S1–4, but the mechanics of S's coalescence have led to various mutations. In the first lemma S has inaccurately placed the doxa under the name-labels Parmenides–Heraclitus. The name-label of the Stoics thus disappears. S2 supports the decision to prefer the reading of E to the mss. of P in P<sub>4</sub>, though S appears to have changed the word order slightly (δέ simply connects the doxai in the cluster). In S3 the text is virtually unchanged (εἶναι is typically added for stylistic fluency). The cluster S4–6 is important because it adds two lemmata missing in P. It does, however, give rise to various problems to be discussed below.

4. Unfortunately T makes no use of this chapter. Ach has a chapter entitled εἰ ζῶα οἱ ἀστέρες (13), but the question of the stars' nourishment is not discussed. In his chapter on the moon two ἀπορίαι are raised

<sup>324</sup> Mau is too conservative in retaining the mss. reading in his text (in contrast to Lachenaud, who follows Diels).

which involve the heat and light of the stars (21, 50.28–51.4 Maass ~ 32.9–18 Di Maria), but these passages are neither doxographic nor directly parallel to the subject in A's chapter.

5. This chapter gives rise to various problems, not all of which can be definitively solved. Nevertheless a sound appreciation of the method of the *Placita* can help us reach results that are at least probable.

It is immediately apparent that the six doxai fall into two groups. Only the first doxa in P and the cluster of three in S<sub>4</sub>–6 address the subject of the chapter's title as it is preserved in P, πόθεν φωτίζονται οἱ ἀστέρες. The remaining three doxai answer the question πόθεν τρέφονται οἱ ἀστέρες. As noted above in sect. 1, for both parts we can adduce parallel chapters elsewhere in Book II. Following his usual method of trying to preserve the basic structure of P as much as possible, Diels retains all six doxai in a single chapter. Another possibility must be taken into account, however, namely that originally these doxai corresponded to two chapters in A. The title may have dropped out early in the ms. tradition of P, or P may have himself joined two chapters together under a single heading. Unfortunately S is no help to us in determining the original title. Because of his grand conflation of at least seven chapters, he had to abbreviate his title and mentions only four of the topics covered, equivalent to P 2.13, 14, 16, 19. Bearing this problem in mind, we shall first examine the two parts of the transmitted text.

6. The three lemmata in S all record essentially the same doxa. The view that the luminosity of the stars was due not (or not primarily) to their own inherent fiery nature but to the sun, on an analogy with the prevailing view on the light of the moon, was, to say the least, a minority position in ancient astronomy. In his detailed survey Boll can do no more than cite the doxai in this chapter.<sup>325</sup> Given the method of the *Placita*, it must be surmised that originally there was an opposition between the view that the stars have their own light (the majority view) and the view that the stars are illuminated by the sun (minority view). This is the distinction which controls the structure of the parallel chapter on the φωτισμοί of the moon (§28). Surprisingly, however, we have found no convincing examples of this διαίρεσις in our sources. The

<sup>325</sup> Cf. Boll (1912) 2411–2412. But note also Ps. Hippocrates *De hebd.* 1.52 Roscher (text below), on which see Mansfeld (1971) 137, who speculates that the *Placita* may have been the source.

only suggestive text of any value is found in the late author Isidore of Seville, who reports that ‘some say that the stars do not have their own light but are illuminated by the sun’ (text below).<sup>326</sup>

It is possible to point to related themes. For example, doxai of Anaxagoras and Democritus are preserved which report the view that the Milky Way is to be explained in terms of the native light of stars when these are not illuminated by the sun (Arist. *Mete.* 1.6 345a25–31, D.L. 2.9, Hipp. *Ref.* 1.8.10). A, however, deals with the Milky Way in a separate chapter (P 3.1, cf. S 1.27).<sup>327</sup> Another common theme is that the light of the sun obscures the light of the stars (cf. Cic. *N.D.* 2.68, Philo *Opif.* 57 etc., also Ach 21 50.28–31 Maass ~ 32.9–12 Di Maria, and the text of Isidore cited above). A in fact refers to this theory in his ch. 28 on the moon’s illuminations. He reports the view of Antiphon (2.28.4\*) that the moon has its own light, but that it is obscured (ἀμαυροῦσθαι, the standard word used by Philo and Ach) by the onslaught of the sun. He then adds the more general comment: πεφνυκότος τοῦ ἰσχυροτέρου πυρὸς τὸ ἀσθενέστερον ἀμαυροῦν ὃ δὴ συμβαίνειν καὶ περὶ τὰ ἄλλα ἄστρα. Similar material could have easily been exploited in the present chapter.

The three name-labels also give rise to problems. This is least the case for Metrodorus, for he occurs frequently in the chapters on the heavenly bodies (2.18.2\*, 20.8\*, 28.5\*). In the last text he is recorded as opining that the moon is illuminated by the sun, which is clearly parallel to the view in this chapter.<sup>328</sup> The emphatic addition of ἅπαντας in the doxa attributed to Metrodorus perhaps implies a contrast with the view that only some of the heavenly bodies are illuminated, e.g. the moon or the Milky Way. The mention of Strato is more of a surprise. He occurs only once elsewhere in the book. At 2.11.4\* he is reported as holding the view that heaven is πύρινος, which does not harmonize well with the present report.<sup>329</sup> The phrase καὶ αὐτός used for Strato is

<sup>326</sup> But the context is not doxographical. Isidore wants to develop the allegory that ‘just as all the stars are illuminated by the sun, so the saints are enlightened by Christ’. Gundel & Gundel (1950) 2110 cite Probus in *Verg. Georg.* 1.336: omnibus stellis sol dat lumen et calorem. But this is too vague to be useful (and probably refers chiefly to the planets).

<sup>327</sup> The separate doxai for Anaxagoras and Democritus in this chapter do not go back directly to Aristotle, though the Democritean doxa does assume that the stars have their own light.

<sup>328</sup> Cf. also his doxa on the Milky Way at P 3.1.3, which is said to be caused by the path of the sun.

<sup>329</sup> Cf. Wehrli (1944–1959) 5.64. But he does not take the method of the *Placita* into

rare in the *Placita*. It does not occur linked to a name-label in P, and is found elsewhere in S's extracts from A only at 1.24.1h, i.e. in the same chapter, where it is used to cover up a difficulty in the grand scheme of coalescence (see above ch. 15 sect. 3). The same process of splitting up two conjoined name-labels could have happened here (note how the verb is the same as in the title), but it is not so likely, since there is no pressing need for S to make the change. It is also possible that the phrase conceals another name-label, but it is hard to see which this might be.<sup>330</sup> The final name-label Diotimus of Tyre occurs only here in A. The additional epithet is highly obscure. The mss. read διοικριτίος, for which Diels brilliantly conjectured ὁ Δημοκρίτειος in his apparatus, but he did not include it in his text. The term Δημοκρίτειος is quite common (cf. D.L. 4.58, Plu. *Mor.* 1108E, S.E. *Hyp.* 1.213) and given the connection of a Diotimus with Democritus in Clem. Al. *Str.* 2.130.6 and S.E. *Adv. Log.* 1.140, Wachsmuth's inclusion of the conjecture in S's text is justified.<sup>331</sup> For the practice of adding a doxa or a name-label which does no more than confirm a previous view see the example at 2.6.6\* (Plato).<sup>332</sup> It is worrying that none of these name-labels occur in the long chapter on the οὐσία of the stars. Yet there would seem to be an obvious correlation between the two subjects.

These three doxai are challenging because we have to determine the extent to which we wish to intervene in the text of our reconstruction. Since, given A's method, it is almost certain that the main view has fallen out, we consider it justified to include it in our text, basing the formulation on A at P 5.12 and 2.28.1\*.<sup>333</sup> It allows this part of the chapter to be structured in terms of a simple type A diaeresis (the basis of the more complex structure in ¶28). In the diagram we leave the line dotted, however, to remind ourselves that it is based on a conjecture.

7. The case of the remaining three doxai—all found in both P and S—on the subject of where the stars obtain their nourishment from

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account in his comments.

<sup>330</sup> One might suggest Κριτόλανος or Ἄρατος or Ἐκαταίος. The last-mentioned is attractive because of the connection of Hecataeus with Diotimus in Clem. Al. *Str.* 2.130.6, but it is paleographically not so likely.

<sup>331</sup> See also Von Arnim (1903) 1150, Dorandi (1989) 2.886. A occasionally indicates the school to which a philosopher belongs, e.g. Timagoras at S 1.52.2 (cf. P 4.13).

<sup>332</sup> Other examples at 2.12.2\* (Oenopides); S 1.49.1a, cf. P 4.2 (Xenocrates).

<sup>333</sup> We follow the example in P 5.12 in including μέν in the first lemma, but not inserting a corresponding δέ in the second.

is much more straightforward. The views are entirely parallel to the chapter on the cosmos' nourishment in 2.5\* entitled Πόθεν τρέφεται ὁ κόσμος. The Aristotelian and Platonic positions are basically the same, but are given here in a more abbreviated form. The Aristotelian view here argues from the stars' everlastingness to the consequence that they do not need nourishment, whereas in the earlier chapter the argument proceeded in reverse.<sup>334</sup> The Platonic doxa here does not specify that the internal food comes from the process of decay. There are two textual problems. As noted above in sect. 2, the name-label the Stoics conjoined with Plato must be wrong. Mau is right in retaining the *difficilior lectio* ἐξ αὐτῶν in P. It is to be preferred to ἐξ αὐτοῦ in ESQ printed by Diels, because it preserves a real contrast between the Platonic and the Heraclitean–Stoic view. The doxa itself seems to be an extrapolation from *Ti.* 40a–c. The Heraclitean–Stoic view, which is placed first, replaces the Philolaic doxa in the earlier chapter. It too is simplified compared with the earlier chapter. For the Stoics the view implies that the stars will ultimately perish in the cosmic conflagration because their external source of food will run out.

The three doxai are organized by means of two oppositions which are very similar to those in the parallel ch. 5. The first is between needing and not needing nourishment, the second between external and internal sources of nourishment. The order, however, is less logical. Instead of beginning with Aristotle, his doxa is sandwiched between the two views affirming that the stars do need nourishment. We present it below as a type B diaeresis, though strictly speaking the middle view is not a compromise view, but opposed to both the other two.

Numerous sources discuss the controversial Stoic theory that the heavenly bodies—and especially the sun as the regent part of the cosmos—are nourished by exhalations from the ocean. But it has proven very difficult to find texts in which this subject is treated dialectically. See the scanty material cited below. It would seem that in his quest for a systematic treatment of topics A included a question that elsewhere got limited treatment. On the other hand, the connection that we find in some sources (e.g. Cicero, Plutarch) between this question and the related question of whether the stars are (divine) living beings is missing in A. As we saw in our analysis of 2.13\* (see sect. 5), Philo in his

<sup>334</sup> The argument here is thus much closer to the parallel in Ach 5, 35.17–18 Maass ~ 14.14–15 Di Maria. A common background may be surmised.

list of doxographical questions on the stars does ask whether they are ensouled and intelligent or devoid of intelligence and soul (*Somn.* 1.22), but he does not ask what their source of nourishment would be if the former option was taken. Similarly, as noted above in sect. 4, Ach gives a full diaeresis on the question of whether the stars are living beings, without raising the question about the stars' source of food. A reverses the approach of these sources by including doxai on the stars' nourishment, but suppressing the question of whether they are (divine) living beings. It is another indication of a tendency to 'secularize' his source material.

8. We now return to the problem with which our analysis started. Can we retain this chapter as it stands in P with just the single title, or is it better to divide it into two chapters, each with its own title (one of which has to be supplied)? Certainly the two parts appear to be quite self-contained. At the same time it is not impossible to see a link.<sup>335</sup> A text in Proclus on *Ti.* 33c–d is suggestive in that regard (text cited below). He observes that the Platonic text speaks of nourishment and digestion in a cosmic context. These processes involve generation and decay, which primarily affect the sub-lunary region, but can also be applied analogously to the heavenly beings, e.g. in activities such as their movements and illuminations. But there is no need to speak of the heavenly beings being nourished by exhalations as some people (i.e. the Stoics) think. There is a link here between illumination and nourishment, but it is indirect, mediated by the theme of generation. The link of course does not work for the Aristotelian doxa, since there nourishment is denied.

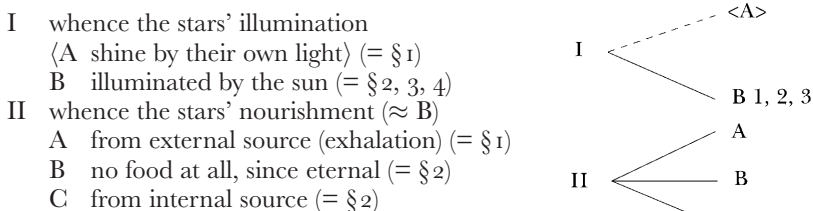
The question can thus now be reframed. Is it likely that A combined the two subjects in a single chapter, perhaps relying on the subtle connection suggested above? Or is it more likely that he kept the two subjects apart in separate chapters and that the joining together of the two in a single chapter was the work of the epitomizer P? On the basis of our understanding of A's method, and in particular in comparison with his treatment of the sequences of chapters on the cosmos and the sun and the moon, we consider the latter option more likely, thus taking the opposite path to the one chosen by Diels. In our reconstruction the

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<sup>335</sup> It is to be noted that in the Proclan passage cited below the questions of the heavenly bodies' illuminations and their source of nourishment are discussed together under the more general heading of change.

material from A will appear as two separate chapters, the second under the conjectured title Πόθεν τρέφονται οἱ ἀστέρες. In P the lemma on illumination precedes those on nourishment. It is best to retain this order. It may be surmised that there were also separate chapters in the source material that A made use of, but we have no evidence to support such a claim.

STRUCTURE (see above sect. 7)



RECONSTRUCTED TEXT

ιζ'. Πόθεν φωτίζονται οἱ ἀστέρες

- 1 <οἱ μὲν πλείστοι ἴδιον αὐτοὺς ἔχειν φῶς.><sup>1</sup>
- 2 Μητροδόωρος ἅπαντας τοὺς ἀπλανεῖς ἀστέρας<sup>2</sup> ὑπὸ τοῦ ἡλίου προσλάμπεσθαι<sup>3</sup>.
- 3 Στράτων καὶ αὐτὸς τὰ ἄστροα ὑπὸ τοῦ ἡλίου φωτίζεσθαι.
- 4 Διότιμος Τύριος, ὁ Δημοκρίτειος<sup>4</sup>, τὴν αὐτὴν τοῦτοις εἰσηνέγκατο γνώμην.

1 coniecimus, vide supra

2 ἀστέρας om. P, ἅπαντας τοὺς ἀστέρας τοὺς ἀπλανεῖς G

3 καταλάμπεσθαι E

4 S (testis unicus) διοκριτιός; διακριτικός conj. Heeren, Δημοκρίτειος Diels *DG* (sed in textu non posuit) Wachsmuth Diels *VS*

§1–; §2 70A9 DK; §3 fr. 85 Wehrli; §4 76.1 DK

17. From where do the stars obtain their illumination

- 1 <The majority (of philosophers declare that) they have their own light.>
- 2 Metrodorus (declares that) all the fixed stars are shone upon by the sun.
- 3 Strato too (declares that) the stars are illuminated by the sun.
- 4 Diotimus of Tyre, the follower of Democritus, introduced the same opinion as these men.



⟨ιζ<sup>+</sup>. Πόθεν τρέφονται οἱ ἀστέρες⟩<sup>1</sup>

- 1 Ἡράκλειτος καὶ<sup>2</sup> οἱ Στωικοὶ τρέφεσθαι τοὺς ἀστέρας ἐκ τῆς ἐπιγείου<sup>3</sup>  
ἀναθυμιάσεως.
- 2 Ἀριστοτέλης μὴ δεῖσθαι τὰ οὐράνια τροφῆς· οὐ γὰρ φθαγρὰ ἀλλ' αἰδία.
- 3 Πλάτων κοινῶς<sup>4</sup> ὅλον τὸν κόσμον καὶ τὰ ἄστρα ἐξ αὐτῶν<sup>5</sup> τρέφεσθαι.

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1 coniecimus, vide supra

2 καί om. E

3 ἀπὸ γῆς S

4 Πλάτων οἱ Στωικοὶ ὡς P (haud dubie ex § 1)

5 αὐτῶν P<sup>1</sup> αὐτῶν P<sup>2</sup> αὐτοῦ ESQ αὐτοῦ Diels

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§ 1a 22A11 DK; § 1b *SVF* 2.690; § 2 T19 Gigon; § 3–

17a. ⟨From where do the stars obtain their nourishment⟩

- 1 Heraclitus and the Stoics (declare that) the stars are nourished from the  
exhalation on earth.
- 2 Aristotle (declares that) the heavenly beings have no need of nourish-  
ment, for they are not perishable but everlasting.
- 3 Plato (declares that) the whole cosmos and the stars jointly obtain their  
nourishment from themselves.

## DIALECTICAL-DOXOGRAPHIC PARALLELS

### chapter 17

**Ps.Hippocrates** *De hebd.* 1.52 Roscher, δεύτεραν τάξιν τὴν τῶν ἄστρον ἀνταυ-  
γίαν. **Proclus**, see text cited below. **Isidore of Seville** *De rer. nat.* 24, stellas  
non habere proprium lumen sed a sole inluminari dicunt nec eas umquam de  
caelo abscedere sed veniente sole celari. omnia enim sidera obscurantur sole  
oriente, non cadunt. nam dum sol ortus sui signa praemisericit, omnis stellarum  
ignis sub eius luminis fulgore evanescunt.

### chapter 17a

**Cicero** *N.D.* 3.37 (Cotta on Stoic school), non eisdem vobis placet omnem  
ignem pastus indigere, nec permanere ullo modo posses nisi alatur? ali autem  
solem, lunam, reliqua astra aquis, alia dulcibus, alia marinis? eamque causam  
Cleanthes adfert ...; cf. Stoic doctrine at 2.39–40, 83. **Philo** *Prov.* 2.64. **Cleo-  
medes** *Cael.* 1.8.79–82, οὐ χρὴ δὲ ἀπορεῖν ἐνταῦθα, πῶς ἢ γῆ στιγμαία οὔσα  
πρὸς τὸ μέγεθος τοῦ κόσμου ἀναπέμπει τροφήν τῷ τε οὐρανῷ καὶ τοῖς ἐμπεριεχο-  
μένοις ἐν αὐτῷ ἄστροις, τοσοῦτοις καὶ τὸ πλῆθος καὶ τὸ μέγεθος οὔσι. **Plutarch**  
*Quaest. Conv.* 728B (why Egyptians avoid salt), ἄλλοι μὲν οὖν ἄλλας αἰτίας φέ-  
ρουσιν· ἔστι δ' ἀληθὴς μία, τὸ πρὸς τὴν θάλατταν ἔχθος ὡς ἀσύμφυλον ἡμῖν καὶ  
ἀλλότριον ... οὐ γὰρ τρέφεσθαι τοὺς θεοὺς ἀπ' αὐτῆς, ὥσπερ οἱ Στωικοὶ τοὺς  
ἀστέρας, ὑπολαμβάνουσιν ... **Proclus** *in Tl.* 2.87.23–88.13 ἔπειτα καὶ αὐτῶν

τῶν οὐρανίων ἀνά λόγον κατὰ τὰς κινήσεις τήν τε αὕξησιν καὶ τὴν φθίσιν δεχομένων κατὰ τὰς ἀνατολὰς καὶ δύσεις καὶ τὰς ἐκφάνσεις καὶ κρύψεις ὑψώσεις τε καὶ ταπεινώσεις φωτισμούς τε καὶ μεταβολὰς τοῦ φωτός, δι' ὧν καὶ τὰ οὐράνια προσλαμβάνει τι καὶ ἀποβάλλει, καθάπερ καὶ τὰ ὑπὸ τὸν οὐρανόν· ἀπὸ γὰρ τούτων τρέπεται καὶ ἡ γένεσις ... οὐκ ἄρα δεῖ λέγειν τρέφεσθαι τὰ οὐράνια ἐκ τῶν ἀναθυμιάσεων, ὥς οἴονται τινες· τὰ γὰρ δεόμενα τῆς ἔξωθεν ἐπιρροῆς καὶ προσθήκην δεχόμενα καὶ ἀφαίρεσιν οὐκ ἀλύτους ἔχει τοὺς δεσμούς. ἄτρεπτα ἄρα μένει τὰ οὐράνια, ὥσπερ δὴ τῶν μὲν ἀρχαίων Πρόκλος τε ὁ Μαλλώτης καὶ Φίλωνίδης εἰρήκασι, τῶν δὲ νεωτέρων οἱ ἀπὸ Πλωτίνου πάντες Πλατωνικοί. See also on ch. 23.

Aëtius *Placita* 2.18

Περὶ τῶν ἄστρον τῶν καλουμένων Διοσκούρων

WITNESSES

Ps.Plutarch 2.18, Eusebius 15.49 (cf. 15.32.8), ps.Galen 60, Qustā Ibn Lūqā 2.18  
Stobaeus 1.24.1n.

ANALYSIS

1. So far all the chapters on the heavenly bodies have treated subjects for which there are analogous chapters elsewhere, e.g. on the cosmos or on the earth. This present chapter deals with a particular theme that is peculiar to the stars, though as we shall see, it could have been placed elsewhere. One can usefully compare the section on the earth (P 3.9–17), which ends with chapters on subjects that are peculiar to the earth, i.e. earthquakes, the sea and tides.

2. For this chapter P preserves two lemmata:

ιη'. Περὶ τῶν ἄστρον τῶν καλουμένων Διοσκούρων

P2.17.1 Ξενοφάνης τοὺς ἐπὶ τῶν πλοίων φαινομένους οἷον ἀστέρας  
νεφέλια εἶναι κατὰ τὴν ποιὰν κίνησιν παραλάμποντα.

P2.17.2 Μητροδόωρος τῶν ὁρώντων ὀφθαλμῶν μετὰ δέους καὶ καταπλή-  
ξεως εἶναι στυλβηδόνας.

The only significant variation among the sources concerns the title; P and Q preserve the long title; E, followed by Diels, leaves out the reference to the stars. G's title is shorter still. Since all the other titles in 2.13–19 do contain the word ἄστροα or ἀστέρες, it seems prudent to retain it. Like in ¶13, the title appears to contain the term ἄστροα (only some mss. of P have ἀστέρων). It is difficult to determine the rationale for the usage of the two very similar terms,<sup>336</sup> and we follow the majority of the witnesses.

3. S preserves only the former of P's doxai:

<sup>336</sup> See our note on 2.13 above, n. 272.

- 1.24 title    Περὶ οὐσίας ἄστρον καὶ σχημάτων, κινήσεώς τε καὶ ἐπισημασίας  
 1.24.1n  
 S1            Ξενοφάνης  
               —τοὺς δὲ ἐπὶ τῶν πλοίων φαινομένους οἶον ἀστέρας, οὓς καὶ  
               Διοσκούρους καλοῦσιν τινες, νεφέλια εἶναι, κατὰ τὴν ποιὰν κίνησιν  
               παραλάμποντα.

The Xenophanean lemma is attached to the earlier doxa of the same philosopher in ¶13. Exceptionally, however, P's second doxa is not included. Metrodoran doxai are found in 2.15\* and 2.17\*, so it should not have been difficult to join it up with the lemmata at 24.1h or 24.3. The omission would appear to be deliberate and runs contrary to S's usual practice. We note that the words οὓς καὶ Διοσκούρους καλοῦσιν τινες have been added to the doxa, no doubt in order to compensate for the fact that A's title has disappeared in his scheme of coalescence. No traces of this chapter or its subject are found in T or Ach.

4. This short chapter treats the phenomenon of St. Elmo's fire, so it could easily have been placed in Book III on meteorological phenomena. It is placed here because the Dioscuri were also associated with the constellation of the Gemini.<sup>337</sup> Since the phenomenon occurs mostly at sea, and was often taken as an augury, the chapter is neatly placed in between 2.17 (stars fed by ocean) and 2.19 (stars as signs).

5. With its two doxai, the chapter thus represents the practical minimum found in the *Placita*, i.e. a single διαίρεσις with two opposed points of view (cf. 2.8\* and 2.10\* above; 2.12\* without a proper division is exceptional). The basis of the dichotomy is clear. Xenophanes, as the representative φυσικός, gives a physical explanation of St. Elmo's fire in terms of his fiery cloud theory, which has already been mentioned at A 2.13.13\* and will return in later chapters.<sup>338</sup> Metrodorus, on the other hand, gives what we might call a psychological or epistemological explanation, i.e. from the viewpoint of the observer.<sup>339</sup> The two views

<sup>337</sup> Cf. Ps.Eratosthenes *Cat.* 10, Kraus at *RAC* 3 (1957) 1128–1129, Pease *ad* Cic. *Div.* 1.77.

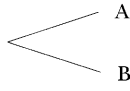
<sup>338</sup> But as cloudlets (νεφέλια) instead of clouds (νέφη). The various lemmata in A show that Xenophanes attempted to introduce differentiation in his theory; see further on 2.20\* and 2.25\* and the comments at Runia (1989) 266–267.

<sup>339</sup> Although this would still be thought of in physical terms, i.e. the glittering of the fearful eyes projects outwards to cause the apparent phenomenon; cf. Plato's φωσφόρα ὄμματα at *Ti.* 45b. I have not been able to find any comments on this passage, not even in the exhaustive account of ancient meteorological theories in Gilbert (1907),

thus represent a clear contrast, though it is left to the reader to determine what its basis is. The reason why S drops the lemma also becomes clear. He must have felt that the psychological explanation did not fit in well with his collection of physical doxai.

6. It will not surprise anyone that substantial parallels are difficult to locate. In a discussion of fires Seneca argues that it is a metereological rather than a prognosticatory or theological phenomenon (text below). Sextus refers to the Dioscuri as part of an argument claiming to prove that there are ensouled and noeric living beings in the air (not the ether), which in turn proves that divinity exists (*Adv. Phys.* 1.86, claimed for the Stoa at *SVF* 2.1014; text below). The allegorical explanation of the Dioscuri in terms of the two hemispheres (cf. Philo *Decal.* 56, S.E. *Adv. Phys.* 1.37, John Lydus *Mens.* 4.17) would of course be quite out of place in A.

STRUCTURE (see above sect. 5)

- |  |   |
|--|---|
| <p>A physical explanation<br/>cloudlets lit up by movement (= §1)</p> <p>B psychological/epistemological explanation<br/>glittering of fearful eyes (= §2)</p> |  |
|--|---|

RECONSTRUCTED TEXT

η'. Περί τῶν<sup>1</sup> ἄστρον<sup>2</sup> τῶν καλουμένων Διοσκούρων<sup>3</sup>

- 1 Ξενοφάνης τοὺς ἐπὶ τῶν πλοίων φαινομένους οἷον ἀστέρα<sup>4</sup>  
νεφέλια εἶναι κατὰ τὴν ποιὰν κίνησιν παραλαμβάνοντα.
- 2 Μητροδόωρος τῶν ὀρώντων ὀφθαλμῶν μετὰ δέους καὶ κατα-  
πλήξεως εἶναι στυλβηδόνας.

1 om. P<sup>2</sup>

2 ἀστέρων P<sup>2</sup>

3 PQ, Περί τῶν καλουμένων Διοσκούρων E, Περί τῶν Διοσκούρων G

4 οὗς καὶ Διοσκούρους καλοῦσι τινες add. S ipse

§1 21A39 DK; §2 70A10 DK

who appears to cover all other Metrodoran fragments. The explanation fits in with Metrodorus' tendency towards scepticism; cf. the comments of Lachenaud (1993) 115, who rightly points to A 4.9 at S 1.50.17. This explanation is quite different, however, to any other doxa of Metrodorus in Books I–III.

18. On the stars that are called the Dioscuri

- 1 Xenophanes (declares that) the star-like appearances on ships are cloudlets that light up in accordance with the kind of movement that they have.
- 2 Metrodorus (declares that) they (the Dioscuri) are the flashing of eyes that gaze with fear and consternation.

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Seneca** *Nat.* 1.1.9–13, illud enim stultissimum, existimare aut decidere stellas aut transilire ... argumentum tempestatis nautae putant, cum multae trasvolant stellae. quod si ventorum signum est, ibi est unde venti sunt, id est in aere, qui medius inter lunam terrasque est. in magna tempestate apparere quasi stellae solent velo insidentes; adiuvari se tunc periclitantes aestimant Pollucis et Castoris numine. causa autem melioris spei est quod iam apparet frangi tempestatem et desinere ventos ... **Sextus Empiricus** *Adv. Phys.* 1.86, εἴπερ τε ἐν γῇ καὶ θαλάσῃ πολλῆς οὔσης παχυμερείας ποικίλα συνίσταται ζῷα ψυχικῆς τε καὶ αἰσθητικῆς μετέχοντα δυνάμεως, πολλῷ πιθανώτερόν ἐστιν ἐν τῷ ἀέρι, πολὺ τὸ καθαρόν καὶ εἰλικρινὲς ἔχοντι παρὰ τὴν γῆν καὶ τὸ ὕδωρ, ἔμψυχα τινα καὶ νοερά συνίστασθαι ζῷα. καὶ τοῦτω συμφωνεῖ τὸ τοὺς Διοσκούρους ἀγαθοὺς τινας εἶναι δαίμονας, σωτῆρας εὐσέλμων νεῶν ...

Aëtius *Placita* 2.19

Περὶ ἐπισημασίας ἀστέρων

WITNESSES

Ps.Plutarch 2.19, ps.Galen 61, Qusṭā Ibn Lūqā 2.19

Stobaeus 1.24.1kl, 4

Cf. Philo *Somn.* 1.53

ANALYSIS

1. The final chapter on the heavenly bodies briefly examines their role as purveyors of signs in relation to the seasons. As in the previous chapter, there is a link to meteorology. We may also compare here a chapter in Book III, the (most likely incompletely preserved) P 3.8 on summer and winter, which just precedes the chapters on the earth.

2. The chapter is preserved in P as follows:

- ιθ'. Περὶ ἐπισημασίας ἀστέρων καὶ πῶς γίνεται χειμῶν καὶ θέρος
- P2.19.1 Πλάτων τὰς ἐπισημασίας τὰς τε θερινὰς καὶ τὰς χειμερινὰς κατὰ τὰς τῶν ἀστέρων ἐπιτολάς τε καὶ δυσμὰς γίνεσθαι, ἡλίου τε καὶ σελήνης καὶ τῶν ἄλλων πλανητῶν καὶ ἀπλανῶν.
- P2.19.2 Ἀναξιμένης δὲ διὰ μὲν ταῦτα μηδὲν τούτων, διὰ δὲ τὸν ἥλιον μόνον.
- P2.19.3 Εὐδόξος Ἄρατος κοινῶς διὰ πάντας τοὺς ἀστέρας, ἐν οἷς φησιν·  
αὐτὸς γὰρ τάδε σήματ' ἐν οὐρανῷ ἐστήριξεν,  
ἀστρα διακρίνας· ἐσκέψατο δ' εἰς ἐνιαυτὸν  
ἀστέρας, οἳ κε μάλιστα τετυγμένα σημαίνουσιν.

Surprisingly E deletes the entire chapter,<sup>340</sup> while G preserves only an abbreviated title (the same as in S) and a truncated version of the first lemma. The second part of P's title is not covered by the contents of the chapter, which discuss not how winter and summer occur but what indications of their occurrence are given by the risings and settings of

<sup>340</sup> The reason is not clear. Obviously he would be opposed to astrology, but he could have appealed to the distinction made by Basil in *Hex.* 6.4–5 between meteorology and astrology. Moreover he is recording doxai of pagan philosophers, which are for the most part nonsense anyway (cf. 15.22.68).

the heavenly bodies. No doubt it has its origin in the first Platonic doxa. Q's title, 'Über die (Wetter-) Konstellationen der Jahreszeiten', seems to be derived from the contents of the chapter rather than from a translation of the Greek original. A shorter title is to be preferred, as implied in S, even if it cannot be confirmed by E.

3. S preserves all three of P's doxai, and has no extra material of his own:

- 1.24 title    Περὶ οὐσίας ἄστρον καὶ σχημάτων, κινήσεώς τε καὶ ἐπισημασίας  
 1.24.1k  
 S1            Ἀναξιμένης  
               — τὰς δὲ ἐπισημασίας γίνεσθαι διὰ δὲ τὸν ἥλιον μόνον.  
 1.24.1l  
 S2            Πλάτων  
               — τὰς δὲ ἐπισημασίας τὰς τε χειμερινὰς καὶ τὰς θερινὰς κατὰ τὰς  
               τῶν ἄστρον ἐπιτολάς τε καὶ δυσμὰς γίνεσθαι.  
 1.24.4  
               Εὐδοξος Ἄρατος τὰς ἐπισημασίας κατὰ τὰς τῶν ἄστρον ἐπιτολάς  
               γίνεσθαι. λέγει γοῦν Ἄρατος ἐν τοῖς Φαινομένοις οὕτως:  
               αὐτὸς γὰρ τὰ γε σήματ' ἐν οὐρανῷ ἐστήριξεν  
               ἄστρον διακρίνας· ἐσκέψατο δ' εἰς ἐνιαυτὸν  
               ἀστέρας, οἳ κε μάλιστα τετυγμένα σημαίνουσιν.

It is clear that S has indulged in a fair amount of rephrasing in order to adapt the three doxai to his grand scheme of coalescence. In general the wording in P must be preferred. One might be tempted to take over S's introduction of the poetic quote, which is much clearer than what is found in P, but the phrase λέγει γοῦν introducing the quote is a tell-tale sign of S's intervention (cf. Vol. I:233).<sup>341</sup> In the Platonic doxa Diels bracketed the words ἡλίου τε καὶ σελήνης καὶ τῶν ἄλλων πλανητῶν καὶ ἀπλανῶν missing in both G and S, presumably regarding them as a gloss (perhaps to explain ταῦτα in the next doxa). It is more likely, however, that S and G would have cut them out than that P would have added them to the original. The inclusion of the words heightens the contrast. Q supports the longer version, but does not translate the final two words. If ταῦτα is taken to refer to all the heavenly bodies, then the formulation in the next doxa is loose, but not untypical of the doxographical method, which highlights the antithesis.

<sup>341</sup> It appears from the poetic quotes at S 1.10.12 (Xenophanes, from A 1.3) and P 1.30.1 (Empedocles) that A did introduce quotes with a reference to the source (in both cases he writes γράφει γὰρ ἐν τῷ ...), so this is not an argument for or against intervention on the part of either P or S.



4. The subject of the chapter is indicated by the fairly rare term ἐπισημασία. In itself it means no more than ‘indication’ or ‘marking out’, but here the additional adjectives make clear that it refers to ‘signs of (the change of) seasons’ (cf. LSJ III). The theme itself goes back to Hesiod; cf. *Op.* 414–419, 546–548. The structure and contents are determined by a straightforward type A diaeresis. Plato regards the signs of seasonal change as occurring through the rising and setting of all the heavenly bodies. The doctrine is patently derived from *Ti.* 40c8–d1, where the crucial word οὐ was dropped in the period between the translators Cicero and Calcidius (most likely due to a change in attitude towards astrology).<sup>342</sup> Anaximenes attributes such signs to the sun only. The third lemma as preserved by P is not strictly speaking antithetical, since it amounts to the same view as Plato’s.<sup>343</sup> A has no doubt included it mainly for illustrative purposes; cf. the quotation of four lines of Empedocles at P 1.30.1 and the way that Aratus is used by Cicero at *N.D.* 2.104–114. The placement of Eudoxus and Aratus together is attractive because both wrote works entitled Φαινόμενα.<sup>344</sup>

5. No parallels are preserved which attempt to oppose views of philosophers on this theme. Philo’s reference to ‘the συμπάθεια of the heavenly bodies towards themselves and the earthly regions’ as part of a series of questions at *Somm.* 1.53 is perhaps an allusion to the contents of this chapter as it occurred in the anterior doxographical tradition (cf. ch. 11 sect. 4(3)). Interestingly in his letter to Pythocles Epicurus discusses the subject and gives two possible causes, neither of which directly relate to the heavenly bodies (text below). A scholion on the same Aratean lines gives a view on this subject which is formulated in a way quite similar to A (text below).<sup>345</sup> A number of texts give lists of astronomers or philosophers who have concerned themselves with the seasonal signs:

<sup>342</sup> See the comments of Taylor (1928) 243–244.

<sup>343</sup> If preference was given to S, it might be argued that a third position was presented involving *only* the constellations (ἄστροα) and not the planets. But the quote does not support this position. Cf. the comments at Mansfeld (1971) 141–142.

<sup>344</sup> Aratus’ name occurs only here in the *Placita* (though his verses are cited in P 1.6); Eudoxus is mentioned also at P 4.1.7 (on the source of the Nile). S also cites Aratus’ poem independently of A at 1.1.3 (v. 1–9), 1.25.9 (822–891), 1.26.6 (778–871).

<sup>345</sup> Lines 11–12 are also cited by Ach at 14, 41.15–17 Maass 21.16–18 Di Maria on the subject of the distinction between ἀστήρ (star) and ἄστρον (constellation). This distinction is not generally maintained by A and is quite different to the subject of this chapter.

- Theophrastus *De signis* 4: Matriketas, Cleostratus, Phacinos, Meton.  
 Vitruvius 9.6.3: Eudoxus, Euctemon, Callippus, Meton, Philippus, Hipparchus, Aratus.<sup>346</sup>  
 Geminus 17.47: Aratus, Boethus, Aristotle, Eudoxus.  
 Ptolemaeus *Phaseis* 2.67: Dositheus, Philippus, Calippus, Euctemon, Meton, Conon, Metrodorus, Eudoxus, Caesar, Democritus, Hipparchus.

The last text belongs to the tradition of the ‘Star calendars’ (παραπήγματα, also mentioned by Vitruvius), to which Pliny refers at *NH* 18.213, giving as an instance of disagreement the different views on the morning setting of the Pleiades by Hesiod, Thales, Anaximander, Euctemon, Eudoxus (text below; note the same constellation in the Aratus scholion). Conspicuous by their absence in all these texts, however, are the names of Plato and Anaximenes. A is drawing on a different tradition and using a different, i.e. diaphonic, technique.

STRUCTURE (see above sect. 4)

- |    |   |  |        |
|----|---|--|--------|
| A1 | weather signs indicated by all heavenly bodies<br>(= § 1) |  | A1, A2 |
| B  | weather signs indicated by sun only (= § 2)               |  | B      |
| A2 | further illustration of first doxa (= § 3)                |  |        |

RECONSTRUCTED TEXT

ιθ'. Περί ἐπισημασίας ἀστέρων<sup>1</sup>

- 1 Πλάτων τὰς ἐπισημασίας τὰς χειμερινὰς τε καὶ τὰς θερινὰς<sup>2</sup> κατὰ τὰς τῶν ἀστέρων<sup>3</sup> ἐπιτολάς τε καὶ δυσμὰς γίνεσθαι, ἡλίου τε καὶ σελήνης καὶ τῶν ἄλλων πλανητῶν καὶ ἀπλανῶν<sup>4</sup>.
- 2 Ἀναξιμένης δὲ διὰ μὲν ταῦτα<sup>5</sup> μηδὲν τούτων, διὰ δὲ τὸν ἥλιον μόνον.
- 3 Εὐδόξος Ἄρατος κοινῶς διὰ πάντας τοὺς ἀστέρας, ἐν οἷς φησιν<sup>6</sup> αὐτὸς γὰρ τὰ γε<sup>7</sup> σήματ' ἐν οὐρανῷ ἐστήριξεν, ἄστρα διακρίνας· ἐσκέψατο δ' εἰς ἐνιαυτὸν ἀστέρας, οἳ κε μάλιστα τετυγμένα σημαίνουσιν<sup>8</sup>.

1 καὶ πῶς γίνεται χειμὼν καὶ θέρος add. P, Περί ἐπισημασίας G, ‘Über die (Wetter-) Konstellationen der Jahreszeiten’ Q

<sup>346</sup> Note that in the passage directly preceding Vitruvius lists five Presocratic philosophers who concerned themselves with the causes governing nature and natural objects and their effects, but does not give specific doctrines or record disagreement.

- 2 χειμερινάς ... θερινάς SGQ, transposuit P  
 3 PG, ἄστρον S  
 4 P, ἡλίου ... ἀπλανῶν om. SG (quos Diels sec.), πλανητῶν καὶ om. Q  
 5 ταύτην P<sup>2</sup>, i.e. lunam?  
 6 P, Εὐδοξος καὶ Ἀρατος τὰς ἐπισημασίας κατὰ τὰς τῶν ἄστρον ἐπιτολὰς γίνεσθαι.  
 λέγει γοῦν Ἀρατος ἐν τοῖς Φαινομένοις οὕτως S  
 7 S Aratus, τάδε P  
 8 P Aratus, σημαίνουσιν S

§ 1–; § 2 13A14 DK; § 3a Eudoxus fr. F142 Lasserre; § 3b Aratus *Phaen.* 10–12

#### 19. On signs of the seasons produced by the heavenly bodies

- 1 Plato (declares that) the signs pertaining to the seasons of winter  
 and summer occur in accordance with the risings and settings of the  
 heavenly bodies, namely the sun and the moon and the other planets  
 and fixed stars.  
 2 Anaximenes, however, (declares that) through these (other heavenly  
 bodies) none of these (signs occur), but through the sun only.  
 3 Eudoxus and Aratus (declare that they occur) communally through all  
 the heavenly bodies, in (the verses in) which he (sc. the latter) says:

For he himself (Zeus) fixed the signs in heaven,  
 distinguishing the constellations; and for the year he devised  
 heavenly bodies to give especially well-constructed signs.

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Epicurus** *ap.* D.L. 10.99, ἐπισημασίαι δύνανται γίνεσθαι καὶ κατὰ συγκυρήσεις καιρῶν, καθάπερ ἐν τοῖς ἐμφανέσι παρ' ἡμῖν ζῴοις, καὶ παρ' ἑτεροιώσεως ἀέρος καὶ μεταβολάς. ἀμφοτέρω γὰρ ταῦτα οὐ μάχεται τοῖς φαινομένοις· ἐπὶ δὲ ποίοις παρὰ τοῦτο ἢ τοῦτο τὸ αἴτιον γίνεται οὐκ ἔστι συνιδεῖν. **Philo** *Somn.* 1.53, text cited in ch. 13. **Pliny** *NH* 18.213, occasum matutinum vergiliarum (i.e. the Pleiades) Hesiodus—nam huius quoque nomine exstat astrologia—tradidit fieri cum aequinoctium autumnum conficeretur, Thales XXV die ab aequinoctio, Anaximander XXX, Euctemon XLIV, Eudoxus XLVIII. nos sequimur observationem Caesaris maxime ... **Schol. Arat.** 10 54.5 Martin, αὐτὸς γὰρ τῶν ὥρων σημεῖα ἐποιήσατο τοὺς ἀστέρας. ἐθέλει δὲ τὰς ἀνατολὰς αὐτῶν καὶ τὰς δύσεις δηλῶσαι, οἷον Πληιάδων ἑῶν ἐπιτολὴν ἀρχῇ θέρους γίνεσθαι, δύσιν δὲ ἑῶν ἀρχῇ χειμῶνος. See further above sect. 5.

Aëtius *Placita* 2.20

Περὶ οὐσίας ἡλίου

WITNESSES

Ps.Plutarch 2.20, Eusebius 15.23, ps.Galen 62, Qusṭā Ibn Lūqā 2.20  
Stobaeus 1.25.1a–g, 3a–1  
Theodoret 4.21  
Cf. Achilles 19, *Isagoge bis excerpta* 17

ANALYSIS

1. The following five chapters in the book (20–24) deal with the most prominent of the heavenly bodies, the sun. As in the parallel sequences on the stars and the moon, the first on the οὐσία of the sun is by far the longest. As already noted, this chapter, together with the parallel chapters 13 and 25 on the stars and the moon respectively, is the longest chapter in Book II. It is also one of the more difficult chapters in the entire book to reconstruct, even though our evidence is relatively copious. Before we can tackle the difficulties, we must set out the evidence.<sup>347</sup>

2. The manuscript tradition of P preserves nine doxai:

κ'. Περὶ οὐσίας ἡλίου καὶ ὅτι δύο καὶ τρεῖς εἰσίν

- P2.20.1 Ἀναξίμανδρος κύκλον εἶναι ὀκτωκαιεικοσαπλασίονα τῆς γῆς, ἄρματίου τροχῷ (παραπλήσιον), τὴν ἀψίδα [παραπλήσιον] ἔχοντα κοίλην, πλήρη πυρός, [ἣς] κατὰ τι μέρος ἐκφαίνουσιν διὰ στομίου τὸ πῦρ ὥσπερ διὰ πρηστήρος αὐλοῦ· καὶ τοῦτ' εἶναι τὸν ἥλιον.
- P2.20.2 Ξενοφάνης ἐκ πυριδίων τῶν συναθροιζομένων μὲν ἐκ τῆς ὑγρᾶς ἀναθυμιάσεως συναθροιζόντων δὲ τὸν ἥλιον· ἢ νέφος πεπτρωμένον.
- P2.20.3 οἱ Στωικοὶ ἄναμμα νοερὸν ἐκ θαλάττης.
- P2.20.4 Πλάτων ἐκ πλείστου πυρός.

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<sup>347</sup> A detailed treatment of this chapter, with particular emphasis on the role of Xenophanes and Theophrastus, was presented in Runia (1992). The present analysis refines elements of that treatment and has led to some revisions, particularly in our view of how the chapter commences. See further the text at n. 363 below.

- P2.20.5 Ἀναξαγόρας Δημόκριτος Μητροδόωρος μύδρον ἢ πέτρων  
διάπτρον.
- P2.20.6 Ἀριστοτέλης σφαῖραν ἐκ τοῦ πέμπτου σώματος.
- P2.20.7 Φιλόλαος ὁ Πυθαγόρειος ὕαλοειδῆ, δεχόμενον μὲν τοῦ ἐν τῷ  
κόσμῳ πυρὸς τὴν ἀνταύγειαν, διηθοῦντα δὲ πρὸς ἡμᾶς τὸ φῶς,  
ὥστε προσεοικέναι ἡλίῳ τὸ ἐν τῷ οὐρανῷ πυρῶδες τό τε δὴ ἀπ’  
αὐτοῦ καὶ ἐσοπτροειδές, καὶ τρίτον τὴν ἀπὸ τοῦ ἐσόπτρου κατ’  
ἀνάκλασιν διασπειρομένην πρὸς ἡμᾶς αὐγὴν· καὶ γὰρ ταύτην  
προσονομάζομεν ἥλιον οἶονεῖ εἰδῶλον εἰδῶλου.
- P2.20.8 Ἐμπεδοκλῆς δύο ἡλίους, τὸν μὲν ἀρχέτυπον, πῦρ ἐν τῷ ἑτέρῳ ἡμι-  
σφαίρῳ τοῦ κόσμου πεπληρωκὸς τὸ ἡμισφαίριον, αἰεὶ καταντικρὺ  
τῇ ἀνταυγείᾳ ἑαυτοῦ τεταγμένον· τὸν δὲ φαινόμενον ἀνταύγειαν  
ἐν τῷ ἑτέρῳ ἡμισφαίρῳ τῷ τοῦ ἀέρος τοῦ θερμομιγοῦς πεπληρω-  
μένῳ, ἀπὸ κυκλοτεροῦς τῆς γῆς κατ’ ἀνάκλασιν ἐγγιγνομένην εἰς  
τὸν ἥλιον τὸν κρυσταλλοειδῆ, συμπεριελκομένην δὲ τῇ κινήσει τοῦ  
πυρίνου· ὥς δὲ βραχέως εἰρησθαι συντεμόντα, ἀνταύγειαν εἶναι  
τοῦ περὶ τὴν γῆν πυρὸς τὸν ἥλιον.
- P2.20.9 Ἐπίκουρος γήινον πύκνωμα κιστροειδῶς ταῖς κατατρήσεσιν ὑπὸ  
τοῦ πυρὸς ἀνημμένον.

We note that four of the doxai are quite long. The Xenophanean doxa unusually appears to combine two separate views. Epicurus, as often, brings up the rear, but this time his view resembles Presocratic views and does not privilege the epistemological aspect. P also deviates in his long title. Compare:

EG	Περὶ ἡλίου
Q	‘Über die Substanz der Sonne’
cf. S	Περὶ οὐσίας ἡλίου

It is clear that the second part of P’s title derives from the doxai of Empedocles and Philolaus, both of which involve multiple suns (cf. the longer title in ¶19, which is also based on a doxa).<sup>348</sup> The title in EG, however, is altogether too short, since it omits to mention the οὐσία which is vital to Aëtius’ systematics in this book. The title as found in SQ is to be preferred.

E writes out the entire chapter, with a good deal of textual variation in the longer doxai (see the apparatus). The same occurs in Q.<sup>349</sup>

<sup>348</sup> The question of multiple suns raises in fact relates to the category of quantity; cf. the combination of essence (or nature) and quantity in 2.1\*. To ask the question whether there is more than one sun is consistent with the method of the *Placita*.

<sup>349</sup> Daiber (1980) 398–400 notes that there is an Arabic translation of approximately

G retains six of P's doxai with varying degrees of alteration (P1-3-4-5-7-9). Most unusually he appends an extra lemma at the end:

- G7            Ἡράκλειτος ἀναμμι, ἐν ταῖς ἀνατολαῖς τὴν ἔξαψιν ἔχοντα, τὴν δὲ σβέειν ἐν ταῖς δυσμαῖς.

This lemma, which is not present in PEQ, appears to double up on the view of the Stoics earlier in the chapter, but does contain extra information about the sun's ignition in the east and quenching in the west. Did G add this himself from his knowledge of Heraclitan philosophy, or does it represent something originally present in A which the other witnesses have missed? We will need to return to it later (sect. 6(6) & (9)).

3. S undertakes to reduce A's five chapters on the sun to a single chapter in another massive exercise in coalescence. The job is less thoroughly done than in his previous chapter. We shall see that in total seven doxai present in P fall by the wayside, and not all of these omissions are deliberate.<sup>350</sup> It appears that the technique of coalescence gives rise to practical problems which S cannot wholly surmount. But there is no reason to doubt that his basic intention is to copy out A in its entirety (cf. Vol. I:233–236). For this chapter sixteen separate doxai can be identified:

- 1.25 title    Περί οὐσίας ἡλίου καὶ μεγέθους σχήματός τε καὶ τροπῶν καὶ ἐκλείψεως καὶ σημείων καὶ κινήσεως
- 1.25.1a  
S1            Ξενοφάνης ἐκ νεφῶν πεπυρωμένων εἶναι τὸν ἥλιον.
- 1.25.1b  
S2            Θεόφραστος ἐν τοῖς Φυσικοῖς γέγραπεν, ἐκ πυριδίων μὲν τῶν συναθροιζομένων (ἐκ) τῆς ὑγρᾶς ἀναθυμιάσεως, συναθροιζόντων δὲ τὸν ἥλιον.
- 1.25.1c  
S3            Ἀναξίμανδρος κύκλον εἶναι ὀκτωκαιικοσαπλασίονα τῆς γῆς, ἄρματιφ τροχῷ παραπλήσιον, ἔχοντα κοίλην περιφέρειαν, πλήρη πυρός, κατὰ μέρος ἐκφαίνουσιν διὰ στομίον τὸ πῦρ ὥσπερ διὰ πρηστήρος.
- 1.25.1d  
S4            Ἀναξίμενης πύρινον ὑπάρχειν τὸν ἥλιον ἀπεφίνατο.

these doxai (with an erroneous doxa of Anaximenes added) which precedes that of Qusṭā. It is the work of al-Ġāhiz (d. 868/9 CE). It does not affect our reconstruction. On the intriguing variant in the Empedoclean doxa see below.

<sup>350</sup> Listed in Vol. I:234–235; three are replaced by excerpts from AD (see the following note).

- I.25.1c  
 S<sub>5</sub> Παρμενίδης καὶ Μητροδώρος πύρινον ὑπάρχειν τὸν ἥλιον.
- I.25.1f  
 S<sub>6</sub> Ἀντιφῶν πῦρ ἐπινεμόμενον μὲν τὸν περὶ τὴν γῆν ὑγρὸν ἀέρα, ἀνατολὰς δὲ καὶ δύσεις ποιούμενον, τῷ τὸν μὲν ἐπικαιόμενον αἰεὶ προλείπειν, τοῦ δ' ὑπονοτιζομένου πάλιν ἀντέχεσθαι.
- I.25.1g  
 S<sub>7</sub> Ἡράκλειτος καὶ Ἐκαταῖος ἄναμμα νοερὸν τὸ ἐκ θαλάττης εἶναι τὸν ἥλιον.
- I.25.3a  
 S<sub>8</sub> Ἀναξαγόρας μύδρον ἢ πέτρων διάπυρον εἶναι τὸν ἥλιον.
- I.25.3b  
 S<sub>9</sub> Θαλῆς γεώδη τὸν ἥλιον.
- I.25.3c  
 S<sub>10</sub> Διογένης κισηροειδῆ τὸν ἥλιον, εἰς ὃν ἀπὸ τοῦ αἰθέρος ἀκτῖνες ἐναποστηρίζονται.
- I.25.3d  
 S<sub>11</sub> Φιλόλαος ὁ Πυθαγόρειος ὑαλοειδῆ τὸν ἥλιον, δεχόμενον μὲν τοῦ ἐν τῷ κόσμῳ πυρὸς τὴν ἀνταύγειαν, διηθοῦντα δὲ πρὸς ἡμᾶς τό τε φῶς καὶ τὴν ἁλέαν, ὥστε τρόπον τινὰ διττοὺς ἡλίους γίνεσθαι, τό τε ἐν τῷ οὐρανῷ πυρῶδες καὶ τὸ ἀπ' αὐτοῦ πυροειδὲς κατὰ τὸ ἐσοπτροειδές· εἰ μὴ τις καὶ τρίτον λέξει, τὴν ἀπὸ τοῦ ἐνόπτρου κατ' ἀνάκλασιν διασπειρομένην πρὸς ἡμᾶς αὐγὴν.
- I.25.3e  
 S<sub>12</sub> Ἐμπεδοκλῆς δύο ἡλίους, τὸν μὲν ἀρχέτυπον, πῦρ ὃν ἐν τῷ ἑτέρῳ ἡμισφαίριῳ τοῦ κόσμου, πεπληρωκὸς τὸ ἡμισφαίριον, αἰεὶ κατ' ἀντικρὺ τῇ ἀνταύγειᾳ ἑαυτοῦ τεταγμένον· τὸν δὲ φαινόμενον, ἀνταύγειαν ἐν τῷ ἑτέρῳ ἡμισφαίριῳ, τῷ τοῦ ἀέρος τοῦ θερμομιγοῦς πεπληρωμένῳ, ἀπὸ κυκλοτεροῦς τῆς γῆς κατ' ἀνάκλασιν γιγνομένην εἰς τὸν ἥλιον κρυσταλλοειδῆ, συμπεριελκομένην τῇ κινήσει τοῦ πυρίνου. ὥς δὲ βραχέως εἰρησθαι συντεμόντι ἀνταύγειαν εἶναι τοῦ περὶ τὴν γῆν πυρὸς τὸν ἥλιον.
- I.25.3f  
 S<sub>13</sub> Ἐπίκουρος γήινον πύκνωμα τὸν ἥλιόν φησιν εἶναι κισηροειδῶς καὶ σπογοειδῶς ταῖς κατατρήσεσιν ὑπὸ πυρὸς ἀνημμένον.
- I.25.3g  
 S<sub>14</sub> Παρμενίδης τὸν ἥλιον καὶ τὴν σελήνην ἐκ τοῦ γαλαξίου κύκλου ἀποκριθῆναι, τὸν μὲν ἀπὸ τοῦ ἁραιότερου μίγματος, ὃ διηθερμόν, τὴν δὲ ἀπὸ τοῦ πυκνοτέρου, ὃπερ ψυχρόν.
- I.25.3h  
 S<sub>15</sub> Δημόκριτος μύδρον ἢ πέτρων διάπυρον.
- I.25.3i  
 S<sub>16</sub> Κλεάνθης ἄναμμα νοερὸν τὸ ἐκ θαλάττης τὸν ἥλιον.

In all cases the doxa from 2.20 is the first (or sole) doxa in the cluster, so the name-labels are written out in full. S continues with two longer extracts on the views of Aristotle (1.25.4) and Zeno (1.25.5a). These are patently drawn from AD, as is no doubt the shorter doxa on Chrysippus (5b).<sup>351</sup> We note provisionally that for S8–16 there is no discrepancy with the sequence in P7–9, but that the differences between S1–7 and P1–6 are quite considerable.

4. T selects seven doxai for his purposes (unless we include his final comment as an eighth, but it is really a concluding summary and does not correspond to anything in P or S). Not surprisingly they are mainly the shorter views:

*GAC* 4.21, 105.16–106.1

- T1 καὶ μέντοι καὶ τὸν ἥλιον καὶ τὴν σελήνην ὁ Ξενοφάνης νέφη εἶναι πεπυρωμένα φησίν·  
 T2 Ἀναξαγόρας δὲ καὶ Δημόκριτος καὶ Μητροδώρος μύδρον ἢ πέτρων διάπυρον·  
 T3 Θαλῆς δὲ γεώδη,  
 T4 κισσηροειδῆ δὲ Διογένης·  
 T5 ὁ δὲ Ἀριστοτέλης σφαῖραν εἶναι ἐκ τοῦ πέμπτου σώματος ξυνεστῶσαν·  
 T6 ὁ δὲ Πλάτων τὸ μὲν πλεῖστον ἔχειν ἐκ τοῦ πυρός, μετέχειν δὲ καὶ τῶν ἄλλων σωμάτων·  
 T7 Φιλόλαος δὲ ὁ Πυθαγόρειος ὕαλοειδῆ, δεχόμενον μὲν τοῦ ἐν τῷ κόσμῳ πυρὸς τὴν ἀνταύγειαν, διηθοῦντα δὲ πρὸς ἡμᾶς τό τε φῶς καὶ τὴν ἀλέαν, εἰδώλου τάξιν ἐπέχοντα·  
 T8 καὶ ἕτεροι δὲ ἕτερα ἅττα περὶ τούτου ἐδόξασαν, ἃ περιττὸν οἶμαι λέγειν, ἵνα μὴ τῆς αὐτῆς μεταλάχῃ τερθρείας.

T commences by speaking of both the sun and the moon. But it seems that he has only coalesced the views of Xenophanes on the two planets, and that from T2 onwards he speaks about the sun only (he returns to the moon in 4.22). The order corresponds to both P and S with one exception: the Platonic view is placed in between those of Aristotle and Philolaus, who stand side by side in P. This is best seen as an intervention on T's part. He had first passed Plato by, but later decided that the *princeps philosophorum* should not be left out. Noteworthy is T's concentration on the 'earthy' views, all three of which are retained in

<sup>351</sup> Cf. fr. 10 and 33 in Diels' collection; nos. 15, 68 and 69 in the list at Runia (1996a) 380–381. Admittedly the Chrysippean doxa is brief enough to be from A, but the parallelism with the doxa on the moon at 1.26.11, which is clearly from AD (= fr. 34 Diels, no. 71 Runia), is conclusive.



their entirety. These are, of course, the most ‘shocking’ views from the viewpoint of later ancient sensibilities.<sup>352</sup> His closing remark indicates that he has not cited all the views in the text before him.

5. In his chapter 19 *Περὶ ἡλίου* Achilles includes a substantial doxographical section on its οὐσία (the term occurs prominently in the first doxa) which shows significant parallels to A:

*Isagoge* 19, 46.9–27 Maass ~ 27.5–19 Di Maria

- |      |  |
|------|--|
| Ach1 | τὴν δὲ οὐσίαν τοῦ ἡλίου Πλάτων περιέργως ἐκ πυρὸς εἶναι φησι,  |
| Ach2 | τινὲς δὲ τῶν φυσικῶν ἐξ ἀναθυμιάσεως γῆς καὶ νεφῶν αὐτὸν εἶναι.  |
| Ach3 | Ἀναξαγόρας μύθρον αὐτὸν εἶπε,  |
| Ach4 | Φιλόλαος δὲ τὸ πυρῶδες καὶ διαυγὲς λαμβάνοντα ἄνωθεν ἀπὸ τοῦ αἰθερίου πυρὸς πρὸς ἡμᾶς πέμπειν τὴν αὐγὴν διὰ τινων ἀραιωμάτων, ὥστε κατ’ αὐτὸν τρισσὸν εἶναι τὸν ἥλιον, τὸ μὲν ἀπὸ τοῦ αἰθερίου πυρὸς, τὸ δὲ ἀπ’ ἐκείνου πεμπόμενον ἐπὶ τὸν ὑλοειδῆ ὑπ’ αὐτοῦ λεγόμενον ἥλιον, τὸ δὲ ἀπὸ τοῦ τοιοῦτου ἡλίου πρὸς ἡμᾶς πεμπόμενον. |
| Ach5 | Ἐπίκουρος δὲ κισηροειδῆ αὐτὸν ἔφη ἐκ πυρὸς διὰ τρημάτων τινῶν τὸ φῶς ἐκπέμποντα.   |
| Ach6 | τινὲς δέ, ὧν ἔστι καὶ Ἀναξίμανδρος, φασὶ πέμπειν αὐτὸν τὸ φῶς σχῆμα ἔχοντα τροχοῦ· ὥσπερ γάρ ἐν τῷ τροχῷ κοίλῃ ἐστὶν ἡ πλήμνη, ἔχει δὲ ἀπ’ αὐτῆς ἀνατεταμέναις τὰς κνημίδας πρὸς τὴν ἔξωθεν τῆς ἀπιδὸς περιφορὰν, οὕτω καὶ αὐτὸν ἀπὸ κοίλου τὸ φῶς ἐκπέμποντα τὴν ἀνάτασιν τῶν ἀκτίνων ποιῆσθαι καὶ ἔξωθεν αὐτὰς κύκλῳ φωτίζειν. |
| Ach7 | τινὲς δὲ ὡς ἀπὸ σάλπιγγος ἐκ κοίλου τόπου καὶ στενοῦ ἐκπέμπειν αὐτὸν τὸ φῶς ὥσπερ πρηστήρα.  |

The first five doxai are directly parallel to A. Ach appears to combine the two Xenophanean doxai that in P and S are still separate, but the name-label is dropped. The order of these also corresponds to what is found in the witnesses to A, except that Plato is brought to the forefront. The last two doxai, however, are quite problematic. Both show similarities to the doxa of Anaximander, but there are no precise verbal correspondences.<sup>353</sup>

<sup>352</sup> Cf. Philo *Aet.* 47, Origen *c. Cels.* 5.11. Both authors, standing in the Judaeo-Christian tradition, take a double attitude: the heavenly bodies are not to be disparaged (Philo does not even mind calling them ‘divine’), but also not to be worshipped or regarded as anything but creatures made by God. Theodoret too stresses that the heavenly bodies are merely γενητά and certainly not θεός (5.40). Both Galen *UP* 12.6 and Augustine *C.D.* 18.41 associate the atheism of Anaxagoras and Epicurus with their views on the sun.

<sup>353</sup> Kahn’s bewildered comment at (1960) 59 indicates that he did not realize

Two other texts from the Aratean commentary tradition that are relevant to this chapter will be cited below when we discuss significant parallels to this chapter in sect. 7.

6. The challenge is now to attempt to recover the original form of this chapter, taking into account the differing methods of our three main witnesses. It must first be said that this chapter clearly reveals the limitations of Diels' method. The reconstruction of this chapter is one of his less satisfactory efforts. As usual he follows P slavishly, virtually disregarding the sequence of S's doxai. This is apparent if we compare the two, taking the numbers given for S in the table above as starting-point (i.e. lemma 1 in S is lemma 3 in Diels etc.).

<b>Stobaeus</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>Diels</b>	3	4	1	2	16	8	15	5	14	9	10	11	12	13	6	7

It is apparent that this result makes nonsense of S's procedure. It is impossible to reconcile it with the fact that, as in both the previous and his next chapter, S uses the long series of doxai on the οὐσία to supply the basic framework for the process of coalescence. As has been noted above, the sequences in all three sources are in fact almost identical. Here too it should not be difficult to improve on Diels' attempt to reconstruct A's text. We shall proceed in a logical sequence of nine steps. Wherever possible we shall exploit correspondences in sequence between our three sources. It is therefore best to begin with the second half of the chapter.

- (1) We commence with the exact correspondence between P7–9 and S11–13, supported by T7 at the end of T's paraphrase and the sequence Ach4–5 (Empedocles missing). We can be confident that the sequence Philolaus–Empedocles–Epicurus was present in A.<sup>354</sup>

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that Diels later rescinded his view in the *DG* that Achilles is directly derived from P.

<sup>354</sup> In the case of the long Philolaic doxa there is considerable variation between the text in P and S. We have opted to print the text in P, but cannot embark on a detailed discussion; on the passage and its relation to the material in Ach see Huffmann (1993) 266–270. On the Empedoclean passage see Guthrie (1962–1981) 2.192. The phrase εἰς τὸν ἥλιον τὸν χρυσταλλοειδῆ is suspect. Remarkably Q here reads 'somit den Berg füllen, welcher "Olympus" genannt wird'. For a reference to Olympus as a mythological name for heaven see A 2.7.6\* (Philolaus), and for its crystalline nature 2.11.2 & 2.13.2 (Empedocles), 2.14.3 (Anaximenes). Q will not have made this up. Mansfeld has suggested, (1983–1986) 426, that this reading goes back to A and we have included the conjecture in our reconstruction.

- (2) The doxa that follows in S on Parmenides (= S14) is difficult. The fact that it is the second doxa attributed to the philosopher in the same chapter is not fatal, for as we shall see in the case of Xenophanes, A's method does allow such a practice. The difficulty is that Parmenides is here recorded as declaring that the sun *and the moon* originate in the Milky Way. The addition of the moon in a chapter on the sun is unexpected and might suggest that the doxa is out of place.<sup>355</sup> We note, however, that the final doxa in ¶28 on the moon's illuminations also speaks of *the sun and moon*. A often places lemmata that fit in less well towards the end of the chapter and it is quite possible that it stood there in this case as an additional remark. To leave it out would certainly not be justified.
- (3) The next significant correspondence in our witnesses is between S8–10 and T2–4. We may again be confident that this sequence was found in A. S will have preserved the text of the doxai of Thales and Diogenes, but comparison with T and P shows that he has modified S8 in order to join it up with another Anaxagorean doxa. Originally A had a triple name-label, Anaxagoras–Democritus–Metrodorus. S preserves the Democritean doxa by including it later in the chapter at S15. The name-label Metrodorus, however, has earlier been coupled with Parmenides in S5. This looks like a mistake on his part, and we shall try to explain how it happened below.
- (4) Both in P and in T Aristotle follows on from after the group we have just dealt with in (3). This doxa is missing in S because it has been replaced by a long extract from AD (= 1.25.4).
- (5) That there was originally a Platonic doxa in the chapter is clear from P and T. S dropped it, no doubt with the intention of including an extract from Plato himself later in the chapter. Presumably he forgot to do this. It is surprising that he in fact never cites the *locus classicus* on the substance of the heavenly bodies, *Ti.* 40a. There remains, however, a discrepancy between P and T on the original location of the Platonic doxa in A. As argued above in sect. 4, this is best seen as an intervention on T's part. On the other hand, T has some additional words, specifying that the sun also shares in other elements. It is likely that these words originally appeared in A and so should be added to the text in P. T's erudition would have been sufficient to add them himself, but we consider this less likely.
- (6) Moving towards the start of the chapter, we now confront the doxai with the Stoicizing view on the sun as an 'intelligent ignited mass from the sea'. There is little mystery here. The two doxai placed at S7 and S16 are the same. Originally there would have been a triple name-label Heraclitus–Hecataeus–Cleanthes, which S split up because in the

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<sup>355</sup> Other possibilities are that the doxa was taken from 3.2 on the Milky Way or that it is an extraneous doxa from another source. Aëtius' schema of course does not allow for easy comparison of the sun and the moon.

coalescence he wanted to group Heraclitean and Stoic doxai (in 1.25.1g & 3i). He clearly knows that Cleanthes is a Stoic, because he coalesces this doxa with a doxa from 2.23 that has the Stoics as name-label. Similarly P must have recognized the doxa as basically Stoic and substituted the name-label of Στωικοί for the more complex set of names in A.

We should not, however, forget the additional lemma found only in G. As noted above in sect. 2, it is not identical with the Stoic doxa found in P and it lacks the qualification of the ignited mass as 'intelligent' found in the Heraclitan–Cleanthean doxai in S. Is it likely that it preserves an additional Heraclitan lemma regarded as superfluous by S when he split up the similar lemma of Heraclitus–Hecataeus–Cleanthes?<sup>356</sup> This scenario is not totally impossible, but that (1) the epitomator P would have kept two such similar doxai, and that (2) the lemma should only survive in G of all our witnesses to P, seems to us both individually and even more in combination highly unlikely.

- (7) The next doxai to be dealt with are S<sub>4-5-6</sub>, for which S is the only witness. Here our suspicions are roused by the fact that the doxai of Anaximenes and Parmenides are identical. It is probable that S has split what was originally a single doxa into two in the process of coalescence (three Anaximenean doxai are joined together). On the other hand the attribution of the same doxa to Metrodorus conflicts with the evidence of P and T, where his view is coupled with Anaxagoras and Democritus. This is almost certainly a mistake on the part of S.<sup>357</sup>
- (8) We now reach the most difficult problem that the chapter poses. There are irreconcilable differences between our two main witnesses for the doxai at the beginning of the chapter. They can be summarized as follows:

<b>Ps. Plutarch</b>		<b>Stobaeus</b>	
P <sub>1</sub>	Anaximander	S <sub>1</sub>	Xenophanes (cf. P <sub>2b</sub> )
P <sub>2</sub>	Xenophanes I + II	S <sub>2</sub>	Theophrastus (cf. P <sub>2a</sub> )
		S <sub>3</sub>	Anaximander (cf. P <sub>1</sub> )

Diels follows his usual practice and gives priority to P. He also interposes the doxa of Anaximenes between Anaximander and Xenophanes, perhaps on chronological or diadochic grounds. But the fact that T starts his list with Xenophanes might have given him pause for thought,

<sup>356</sup> A suggestion made to us by Oliver Primavesi.

<sup>357</sup> The coupling of Parmenides and Metrodorus can be explained as follows. S had noted in the back of his mind that Metrodorus was third in a triple doxa. When he split up Anaximenes and Parmenides he got confused and mistakenly thought that this was the triple doxa (both start with Anax-). So Metrodorus was added to Parmenides. It is also possible that originally a different name was present in S as the third name-label. One might think of Melissus, but doxai are attributed to him in Book II only for the cosmos as whole (1.2\*, 5.5\*). To compound the matter further, in Book III we read at P 3.9.5: Μητροδόωρος τὴν μὲν γῆν ὑπόστασιν εἶναι καὶ τρύγα τοῦ ὕδατος, τὸν δ' ἥλιον τοῦ ἀέρος. Metrodorus of Chios is surprisingly prominent in the *Placita*, with about 20 doxai mainly found in Books I–III. They have received very little attention.

although of course he could argue that T simply passed over the doxa of Anaximander. As noted above, it is unusual for P to combine two views in a single lemma as he has done for Xenophanes.<sup>358</sup> Comparison with S shows that he simply paraphrased away the reference to Theophrastus. On the other hand, S by not repeating the name-label Xenophanes might give the impression that the doxa belongs to the Peripatetic philosopher rather than the Presocratic.<sup>359</sup> Some scholars have indeed thought that the doxa on the sun being produced from firelets drawn from the moist exhalation was authentically Theophrastean, even though it deviates significantly from the standard Peripatetic doctrine of the fifth element.<sup>360</sup> Diels, however, followed his teacher Usener in arguing that the passage was drawn from Theophrastus' doxographical work *Φυσικῶν δόξαι* (in spite of the reference *ἐν τοῖς Φυσικοῖς* in S's text) and that it reported the view of Xenophanes. He linked the two doxai and suggested that the words *ἢ ὥς* had been omitted by S.

In our view Diels was correct in attributing both doxai to Xenophanes. But this does not solve all the problems, because we still have to decide between the initial sequence of doxai in P and S. It is not necessarily the case that the two Xenophanean doxai were joined up in the original text in A. They may have been coalesced by S. In fact, as we have noted before,<sup>361</sup> it does happen on a number of occasions in the *Placita* that more than one view is attributed to a philosopher in the same chapter. This practice, which seems odd from the modern perspective of the history of philosophy, is a natural consequence of the fact that in the *Placita* the doxa is of greater importance than the name-label that is attached to it. There are quite a few examples of such 'doublets' in our present book: e.g. 2.1\* (Pythagoras, Empedocles, Melissus), 2.12\* (Pythagoras), 2.13\* (Diogenes), 2.24\* (Xenophanes again), 2.31\* (Empedocles), as well as the two Parmenidean doxai in the present chapter (if the second one does indeed belong here). So it is quite plausible that there may have been some distance between the two doxai in A and that they were not necessarily grouped together at the beginning. Since there is a strong link between the second Xenophanean doxa and the 'Stoicizing' view attributed to Heraclitus etc., it is very likely that it preceded that doxa.

<sup>358</sup> The cases where P juxtaposes two separate views in a single lemma are very rare; the only clear example we could find is at 1.28.3 (Chrysippus). Texts such as 1.21.2, 4.2.1, 4.5.6, 5.8.1–2 etc. are different because the alternative is part of the (single) doxa.

<sup>359</sup> For the very modest role that Theophrastus plays in the *Placita* see Runia (1992) 124. Elsewhere he is cited only in the Preface (together with Aristotle), in 1.29 (= S 1.6.17c), and in 2.29 (reporting on Anaxagoras).

<sup>360</sup> See esp. Steinmetz (1964) 334–351, supported by Mansfeld (1987) 293. See the fuller discussion in Runia (1992) cited above in n. 347, where on p. 125 we also discuss other doxographical evidence on Xenophanes in Hippolytus *Ref.* 1.14.3 and ps.Plutarch *Str.* 4. It is remarkable that the second text has both the doxai present in A.

<sup>361</sup> See above ch. 13 sect. 6.

However, a problem still remains. We have to decide whether the chapter started with the doxa of Anaximander (as in P) or with the doxa of Xenophanes (as in S).<sup>362</sup> Both possibilities can be defended. In an earlier treatment we gave the preference to S and commenced our reconstruction with the Xenophanean doxa.<sup>363</sup> But there was one element in A's practice that we did not sufficiently take into account. It is clear that in the long chapters on the nature of the stars, sun and moon (13, 20, 25) a privileged role is given to the early Milesian philosophers. No doubt this is connected with the role that the successions and particularly the very early philosophers play in the *Placita*, as examined in detail in Part I sect. 7.<sup>364</sup> Against this background it now seems to us more likely that P does preserve the start of the chapter with the doxa of Anaximander. The parallel with the start of 2.25\* is particularly impressive. We therefore have to explain why S deviated from the order in his source and reversed the doxai of Anaximander and Xenophanes. It would seem that he was attracted to the latter's brief doctrinal formulation and so started with this doxa, to which after citing the Xenophanean doxa from 2.24 he attached the other doxa in the chapter without indicating that it too belonged to Xenophanes. There is at least one clear instance where S deviates from his normal practice of adhering to A's order and reverses the order of his doxai, namely at 1.22.3a where he writes out the doxa of Empedocles before that of the Stoa, perhaps for chronological reasons, i.e. P 1.5.2–1 (there is no need to question P's order here).<sup>365</sup> If this view of S's procedure is accepted, it is likely that he also added the words εἶναι τὸν ἥλιον not found in P.

- (9) There is one remaining loose end to be tidied up, viz. the additional lemma in G. It cannot have been contaminated from S, since it differs too much in its formulation. It is just possible that the Heraclitean doxa was originally present in P but was lost at some stage and has only been preserved in G (cf. Diels *DG* 16). The position at the end of the chapter, however, definitely militates against this hypothesis. Another possibility is that G picked it up from somewhere and added it himself. The daily ignition and extinction recalls Xenophanes' view at 2.24.5\*. It should be left out of the reconstructed chapter.

7. As the result of the above analysis, which is based largely on an understanding of how our witnesses went to work, we obtain the following sequence:

<sup>362</sup> As noted above, T also starts with Xenophanes, but he may have simply omitted the long and idiosyncratic view of Anaximander; so his evidence cannot be considered decisive.

<sup>363</sup> Runia (1992) 133.

<sup>364</sup> See esp. the discussion in the text after n. 197, where we emphasize that the emphasis on successions remains subordinate to the diaeretic structure of these chapters.

<sup>365</sup> Cf. also 1.10.16b where P 1.2 is written out after the final doxai of P 1.3.

1	Anaximander	fiery circle
2	Xenophanes I	from ignited clouds
3	Anaximenes–Parmenides I	fiery
4	Antiphon	fiery encroaching on the air
5	Xenophanes II (from Theophrastus)	firelets from moist exhalation
6	Heraclitus–Hecataeus–Cleanthes	intelligent ignited mass from sea
7	Plato	mostly from fire
8	Anaxagoras–Democritus– Metrodorus	inflamed clump or rock
9	Thales	earthy
10	Diogenes	like pumice stone
11	Aristotle	sphere made of the fifth body
12	Philolaus	glassy, double or triple reflecting cosmic fire
13	Empedocles	two suns, archetype and reflection
14	Epicurus	earthy ignited concentration
15	Parmenides II	separated from Milky Way (with moon)

Is it possible to understand what A thought he was doing in compiling this particular sequence?

The dialectical-doxographical tradition can give us some initial assistance. The rhetors Theon and Hermogenes both give as an example of a *θέσις* the subject εἰ ὁ ἥλιος πῦρ (texts below). No alternative is given, but it is implied that one exists. More valuable are two texts in the Aratean commentary tradition:<sup>366</sup>

(1) *Isagoge bis excerpta* 17, 319.5–8 Maass

ιζ'. Ἥλιος

τὸν δὲ ἥλιον οἱ μὲν ὥρισαντο [τὸ] πῦρ, οἱ δὲ μύδρον, ὥς Ἀναξαγόρας, καὶ φασιν αὐτὸν κυκλοτερεῖ ὄντα ὀκτωκαιδεκαπλάσιον εἶναι τῆς γῆς.

(2) *Isagoge* 2, 30.20–28 Maass ~ 9.2–8 Di Maria

Εὐδωρος ὁ φιλόσοφος φησι Διόδωρον τὸν Ἀλεξανδρεᾶ μαθηματικὸν τούτῳ διαφέρειν εἰπεῖν τὴν μαθηματικὴν τῆς φυσιολογίας, ὅτι ἡ μὲν μαθηματικὴ τὰ παρεπόμενα τῇ οὐσίᾳ ζητεῖ, πόθεν καὶ πῶς ἐκλείψεις γίνονται, ἡ δὲ φυσιολογία περὶ τῆς οὐσίας, τί ἥλιον φύσις, πότερον μύδρος ἐστὶ κατὰ Ἀναξαγόραν ἢ πῦρ κατὰ τοὺς Στωϊκοὺς ἢ κατὰ Ἀριστοτέλην πέμπτη οὐσία μηδενὶ τῶν τεσσάρων στοιχείων ἐπικοινωνοῦσα, ἀγέννητός τε καὶ ἄφθαρτος καὶ ἀμετάβολος.

<sup>366</sup> On the relation of these texts to the *Placita* see vol. 1:299–306, where we note that the first text is probably partially based on the second.

In the first text a division is made between those who determine it to be fire and those who make it a clump (μύδρος, same term as in the doxa P5 = S8 attributed to Anaxagoras etc.).<sup>367</sup> In the second Achilles relates a report by Eudorus the philosopher on Diodorus of Alexandria the astronomer,<sup>368</sup> who opposes the Anaxagorean view that it is a μύδρος to the Stoic view that it is fire, with a third Aristotelian view that it is the fifth essence added.

It is clear that this basic antithesis between the sun as fire and the sun as a hot rock lies at the centre of A's chapter. It is the same dominant diaeresis that recurs in the parallel chapters on the stars (13) and the moon (25). Lemmata 1–3 form a group in which the sun is linked to fire. Lemmata 8–10 represent the opposed view of the sun as a clump. In between these there are four doxai which link the sun's substance to the intermediate elements air (lemma 4) or water (5–6) or all the remaining elements (7). It is easy to see how this third group has an intermediate, bridging position. The final five views form a less homogenous group of what might be called 'additional and exceptional views'. Two of these involve multiple suns, and would have been difficult to place in the earlier groups. They clearly form a contrasted pair.<sup>369</sup> The final doxa, as noted above, is best seen as an additional comment, which only has a loose relation to the rest of the chapter. So two doxai remain, 11 and 14.

The placement of the Aristotelian doxa might seem surprising, because it does not seem very obviously related to the third group and could have easily been placed earlier near the group which regards the sun as fiery. One suspects that A's love of joining together by association has got the better of him and led him to place the doxa here because the αἰθήρ (= fifth element) has just been mentioned in the Diogenean doxa.

The location of the Epicurean doxa remains a puzzle. In terms of content it hardly differs from the view of Diogenes. Why, then, is the doxa not placed earlier? The answer would appear to be that in these cosmological chapters, as we have noted more than once previously,

<sup>367</sup> The remaining doxa reports on the sun's size; see further ch. 21 sect. 5.

<sup>368</sup> On the extravagant claims for this text made by Lebedev in order to prove that Eudorus is one of the key sources for the *Placita* see Vol. I:337.

<sup>369</sup> Cf. Bollack (1965–1969) 3.266, who points this out and argues that the contrast goes back to Theophrastus.



Epicurus has a fixed position at the end because of his consistent refusal to espouse a single theory.<sup>370</sup> In the case of the οὐσία of the sun, Epicurus is not very explicit in his *Letter to Pythocles*.<sup>371</sup> The account in Lucretius, however, shows that various alternatives were given on the nature and role of the sun, one of which was the explanation in our text. This evidence can be complemented by a fragment from the inscription of Diogenes Oenanda which yields only one view, but significantly starts with the word ἐνδέχεται, which is the standard phrase for indicating the non-dogmatic stance in A (texts below).<sup>372</sup> It would seem that Epicurus has retained his (almost) final place here, but that at some stage in the tradition one of the views he thought possible was selected as representing his position. That this occurred prior to A is suggested by the parallel in Ach, which states the same doxa in a slightly different wording.

8. We conclude, therefore, that for the purposes of understanding the chapter's structure the fifteen doxai can be most naturally divided into four groups (see diagram below). The chief opposition is between group A and group C, which might be seen as originating in a type A diaeresis if we recognize that the subject of the chapter is formulated in the tradition as εἰ ὁ ἥλιος πῦρ, i.e. is the sun fire or is it not, i.e. is it a hot rock? Group B forms a transitional position between the sun as fire and the sun as earthy, which converts the structure as a whole into a type B diaeresis. The final group of doxai represent additional or exceptional views, with the two doxai of multiple suns clearly in opposition to each other.

Particularly strong in this chapter is A's tendency to concatenate by stringing together doxai through association. In the case of Aristotle this has led to a not very logical position at the end of the group of 'clump' doxai, whereas in ¶13 and ¶25 he has the more natural position of following Plato. The venerable Thales does not lead this group with his simple doxa, but is preceded by Anaxagoras *cum suis* precisely

<sup>370</sup> See our observations above in ch. 2 sect. 6; ch. 4 sect. 8(6); ch. 13 sect. 8(6).

<sup>371</sup> See the general passage on all heavenly bodies at D.L. 10.90 which has been cited among the parallels in ch. 13.

<sup>372</sup> Cf. A 2.5\*, 2.22.4\*, P 3.15.11, in all three cases doxai of Epicurus in last position; note also the last doxa at P 5.14.3, but this time it is the view of the doctor Diocles. Epicurus is also placed in last position at Seneca *Nat.* 6.20.5 (again on earthquakes): *omnes istas esse posse causas Epicurus ait pluresque alias temptat ...*

because the transition is then smoother. This method of concatenation, together with the fact that the second group acts as a kind of intermediate between the two main positions, gives the chapter a progressive movement indicated by an arrow on our structural diagram.

9. We have already noted above that the dialectical-doxographical parallels can help us understand A's procedure in this chapter. The nature of the sun was certainly a standard subject for the *θέσις* or *quaestio infinita*, as the texts in Hermogenes and Theon cited above prove. The original context for such discussion can be found in the philosophical tradition (for examples in Plato, Aristotle and the Stoa see below; note how Aristotle explicitly asks the question τί ἐστιν ἥλιος, i.e. what is its οὐσία). A further example of how such a *θέσις* could be used in a quite different context is given by Stobaeus in his chapter on the sun (I.25.6–7), who records an opposition between Euripides and Homer in which the former asserts that the sun is fire, the latter that it is *not* fire but rather the purest light (text below). In another text that connects the question of the sun's nature to the Homeric text ps.Plutarch argues that it is not fire, but rather a higher substance, which he relates rather clumsily to the Aristotelian doctrine (text below). None of the four epithets used of the sun are exclusively Aristotelian.<sup>373</sup> A similar text is found in Ambrose, where he argues against those who deny its fiery nature.

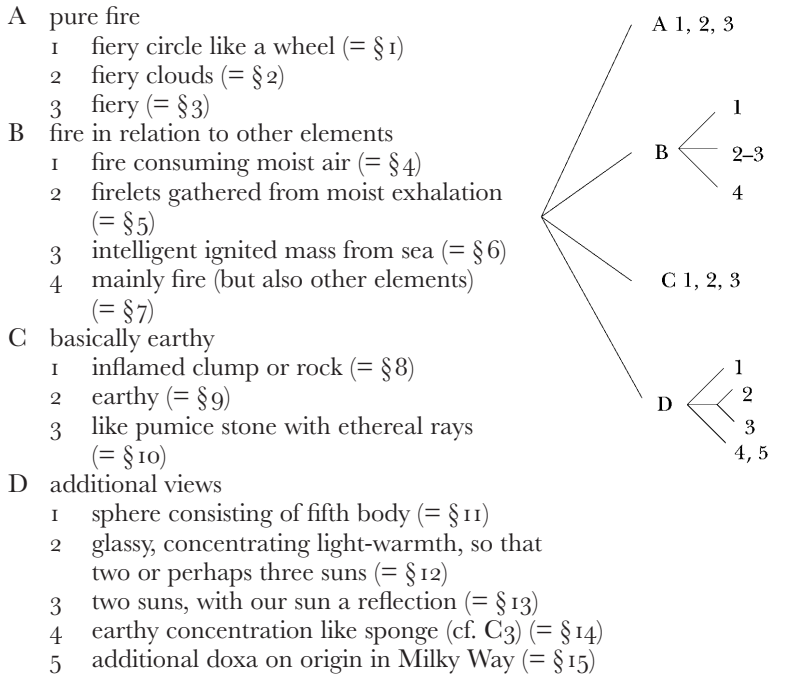
10. A final word needs to be said about the relationship between A and Ach. As we saw, the first five doxai in Ach all have their equivalent in A. In terms of our reconstruction they have the order 7-6-8-12-14. The parallelism is probably too close to be coincidental. The role of the Platonic doxa in the two chapters differs: in Ach it appears to represent the position that the sun is basically fire, in A it is part of the intermediate group which also relates its substance to the other elements. Nevertheless we may cautiously conclude that the anterior tradition behind A and Ach had a structure similar to what we have now discovered in A. The final two doxai in Ach (6–7) are both loosely connected with the Anaximandran doxa in A. There are a number

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<sup>373</sup> One might compare the lemma on the sun in the Ps.Platonic *Definitions*, 411a7–b2: ἥλιος πῦρ οὐράνιον· ὃ μόνον ἀπ' ἡοῦς μέχρι δειλῆς τοῖς αὐτοῖς ἐστιν ὀραθῆναι ἄστρον ἡμεροφανές· ζῶον αἰδίων ἐμψυχον τὸ μέγιστον.

of common terms (τροχός, ἀψίς, κοίλος, πρηστήρ), but there are also significant differences (light instead of fire, no mention of the size of the circle, trumpet instead of flute). It would seem that the source is a parallel rather than a shared tradition.<sup>374</sup>

STRUCTURE (see above sect. 8)



RECONSTRUCTED TEXT

κ'. Περί οὐσίας ἡλίου<sup>1</sup>

- 1 Ἀναξίμανδρος κύκλον εἶναι ὀκτωκαιικοσαπλασίονα τῆς γῆς, ἄρματίου τροχῷ τὴν ἀψίδα παραπλήσιον ἔχοντα κοίλιν<sup>2</sup>, πλήρη πυρός, κατὰ τι μέρος<sup>3</sup> ἐκφαίνουσιν διὰ στομίον τὸ πῦρ ὥσπερ διὰ πρηστήρος ἀύλου· καὶ τοῦτ' εἶναι τὸν ἥλιον<sup>4</sup>.
- 2 Ξενοφάνης ἐκ νεφῶν πεπερωμένων<sup>5</sup>.
- 3 Ἀναξίμενης Παρμενίδης πύρινον<sup>6</sup>.

<sup>374</sup> It is possible that they might both go back to Theophrastus, but this is no more than a guess.

- 4 Ἄντιφῶν πῦρ ἐπινεμόμενον μὲν τὸν περὶ τὴν γῆν ὑγρὸν ἄερα,  
ἀνατολὰς δὲ καὶ δύσεις ποιούμενον, τῷ τὸν μὲν ἐπικαιόμενον αἰεὶ  
προλείπειν, τοῦ δ' ὑπονστιζομένου πάλιν ἀντέχεσθαι.
- 5 Ξενοφάνης, (ὥς)<sup>7</sup> Θεόφραστος ἐν τοῖς Φυσικοῖς γέγραπεν, ἐκ  
πυριδίων<sup>8</sup> τῶν συναθροιζομένων μὲν ἐκ τῆς ὑγρᾶς ἀναθυμιάσεως  
συναθροιζόντων δὲ τὸν ἥλιον.
- 6 Ἡράκλειτος Ἐκαταῖος Κλεάνθης ἄναμμα νοερὸν<sup>9</sup> ἐκ θαλάττης<sup>10</sup>.
- 7 Πλάτων ἐκ πλείστου πυρός<sup>11</sup>, μετέχειν δὲ καὶ τῶν ἄλλων σωμάτων.
- 8 Ἀναξαγόρας Δημόκριτος Μητροδόωρος μύδρον ἢ πέτρον διάπυρον.
- 9 Θαλῆς γεώδη<sup>12</sup>.
- 10 Διογένης κισηροειδῆ<sup>12</sup>, εἰς ὃν ἀπὸ τοῦ αἰθέρος ἀκτῖνες ἐναποστηρί-  
ζονται.
- 11 Ἀριστοτέλης σφαῖραν ἐκ τοῦ πέμπτου σώματος.
- 12 Φιλόλαος ὁ Πυθαγόρειος ὑαλοειδῆ, δεχόμενον μὲν τοῦ ἐν τῷ  
κόσμῳ πυρὸς τὴν ἀνταύγειαν, διηθοῦντα δὲ πρὸς ἡμᾶς τό τε φῶς<sup>13</sup>  
καὶ τὴν ἀλέαν, ὥστε προσεικέναι ἡλίῳ τὸ ἐν τῷ οὐρανῷ πυρῶδες  
τό τε δὴ ἀπ' αὐτοῦ καὶ ἐσοπτροειδές, καὶ τρίτον τὴν ἀπὸ τοῦ  
ἐσόπτρου κατ' ἀνάκλασιν διασπειρομένην πρὸς ἡμᾶς αὐγὴν<sup>14,15</sup>, καὶ  
γὰρ ταύτην προσονομάζομεν ἥλιον οἶονεῖ εἰδῶλον εἰδῶλου.
- 13 Ἐμπεδοκλῆς δύο ἡλίους, τὸν μὲν ἀρχέτυπον, πῦρ<sup>16</sup> ἐν τῷ ἑτέρῳ  
ἡμισφαίριῳ τοῦ κόσμου πεπληρωκὸς τὸ ἡμισφαίριον, αἶε καταν-  
τικρὺ τῇ ἀνταύγειᾳ ἑαυτοῦ τεταγμένον· τὸν δὲ φαινόμενον ἀν-  
ταύγειαν ἐν τῷ ἑτέρῳ ἡμισφαίριῳ τῷ τοῦ ἀέρος τοῦ θερμομιγοῦς  
πεπληρωμένῳ, ἀπὸ κυκλοτεροῦς τῆς γῆς<sup>17</sup> κατ' ἀνάκλασιν ἐγγι-  
γνομένην εἰς τὸν Ὀλυμπον<sup>18</sup> τὸν κρυσταλλοειδῆ, συμπεριελκομένην  
δὲ τῇ κινήσει τοῦ πυρίνου· ὥς δὲ βραχέως<sup>19</sup> εἰρῆσθαι συντεμόντι<sup>20</sup>,  
ἀνταύγειαν εἶναι τοῦ περὶ τὴν γῆν πυρὸς<sup>21</sup> τὸν ἥλιον.
- 14 Ἐπίκουρος γήινον πύκνωμα κισηροειδῶς καὶ σπογγοειδῶς<sup>22</sup> ταῖς  
κατατρήσεσιν ὑπὸ τοῦ πυρὸς ἀνημμένον.
- 15 Παρμενίδης τὸν ἥλιον καὶ τὴν σελήνην ἐκ τοῦ γαλαξίου κύκλου  
ἀποκριθῆναι, τὸν μὲν ἀπὸ τοῦ ἀραιότερου μίγματος, ὃ δὴ θερμόν,  
τὴν δὲ ἀπὸ τοῦ πυκνοτέρου, ὅπερ ψυχρόν.

1 SQ, καὶ ὅτι δύο καὶ τρεῖς εἰσὶν add. P, Περὶ ἡλίου EG

2 κοίλην PG κοῖλον E, ἔχοντα κοίλην περιφέρειαν S

3 SEG (defuit in Q), ἥς κατὰ τι μέρος P, ἥς del. Diels Mau Lachenaud

4 αὐλοῦ ... ἥλιον om. S

5 SE, νέφος πεπτωμένον P, νέφη πεπτωμένα Q?, εἶναι τὸν ἥλιον add. S

6 ὑπάρχειν τὸν ἥλιον ἀπεφῆνατο add. S

7 addidimus, ἢ ὥς conj. Usener

8 ἐκ πυριδίων μὲν τῶν συναθροιζομένων ἐκ ... S

- 9 τὸ inseruit S  
 10 Ἡράκλειτος ἄναμμα, ἐν μὲν ταῖς ἀνατολαῖς τὴν ἕξαψιν ἔχοντα, τὴν δὲ σβέσιν ταῖς  
 δυσμαῖς G in ultimo loco, sed desunt in PEQ  
 11 PGQ, πλείστον πυρός E, τὸ μὲν πλείστον ἔχειν ἐκ τοῦ πυρός T  
 12 τὸν ἥλιον add. S  
 13 τὸ φῶς P  
 14 ὥστε προσεικέναι ἡλίου τὸ ἐν οὐρανῷ πυρῶδες τῇ ἀπὸ τοῦ ἐνόπτρου κατ' ἀνά-  
 κλασιν διασπειρομένη πρὸς ἡμᾶς αὐγῇ E  
 15 ὥστε ... αὐγὴν P, ὥστε τρόπον τινὰ διττοὺς ἡλίους γίνεσθαι, τό τε ἐν τῷ οὐρανῷ  
 πυρῶδες καὶ τὸ ἀπ' αὐτοῦ πυροειδὲς κατὰ τὸ ἐσοπτροειδές· εἰ μὴ τις καὶ τρίτον  
 λέξει, τὴν ἀπὸ τοῦ ἐνόπτρου κατ' ἀνάκλασιν διασπειρομένην πρὸς ἡμᾶς αὐγὴν S  
 16 πῦρ ὃν S  
 17 <αὐ>γῆς conj. Bernadakis  
 18 conj. Mansfeld e Q (vide supra), ἥλιον PS  
 19 διὰ βραχείος E  
 20 conj. Meineke prob. Diels, συντεμόντα PES  
 21 ἀνταύγειαν ... πυρός PS, πῦρ E  
 22 SQ(?), κιστροειδῶς P, κιστροειδὲς καὶ σπογγοειδὲς E, γήινον κύκλωμα, κιστροει-  
 δῇ καὶ σπογγοειδῇ ταῖς κατατρήσεσιν ἐνημμένον G

§1 12A21 DK; §2 21A40 DK; §3a 13A15 DK; §3b 28A41 DK; §4 87B26 DK; §5  
 21A40 DK, Theophrastus fr. 232 FHS&G, Diels *Phys.Dox.* fr. 16 non recte; §6a 22A12  
 DK; §6b 73B9 DK; §6c *SVF* 1.501; §7–; §8a 59A72 DK; §8b 68A87 DK; §8c 70A11  
 DK; §9 11A17a DK; §10 64A13 DK; §11 T19 Gigon; §12 44A19 DK; §13 31A56 DK;  
 §14 fr. 343 Usener; §15 28A43 DK

## 20. On the substance of the sun

- 1 Anaximander (speaks of) a circle twenty-eight times the earth, similar  
 to a chariot wheel with a hollow rim, filled with fire, revealing the fire  
 in a particular part through an opening as through the nozzle of a set  
 of bellows, and this is the sun.
- 2 Xenophanes (declares that the sun is formed) from inflamed clouds.
- 3 Anaximenes and Parmenides (declare that the substance of the sun is)  
 fiery.
- 4 Antiphon (declares that it is) fire encroaching on the moist air near  
 the earth, and (so) causing sunrises and sunsets, with the air always  
 succumbing (to the sun) as it burns and resisting it again as it is slightly  
 dampened.
- 5 Xenophanes, as Theophrastus has written in his *Physics*, (declares that  
 the sun is formed) from firelets that are gathered together out of the  
 moist exhalation and so gather together the sun.
- 6 Heraclitus, Hecataeus and Cleanthes (declare that the sun is) an  
 intelligent ignited mass (formed) from the sea.
- 7 Plato (declares that it consists) of fire for the most part, but also has a  
 share of the other elements.
- 8 Anaxagoras, Democritus and Metrodorus (declare that it is) an  
 inflamed clump or rock.
- 9 Thales (declares that it is) earthy.

- 10 Diogenes (declares that it is) pumice-like, and that rays from the ether fix themselves into it.
- 11 Aristotle (declares that it is) a sphere (made up) of the fifth body.
- 12 Philolaus the Pythagorean (declares that it is) glass-like, on the one hand receiving the reflection of the fire in the cosmos, on the other hand pushing the light and the heat through towards us, so that (we have) resembling the sun (first) the fiery (element) in the heaven, (second) the one derived from it and mirror-like, and third the beam spread out towards us from the mirror through reflection. For it is this which we call the sun, like an image of an image.
- 13 Empedocles (declares that there are) two suns: on the one hand (there is) the archetype, which is fire in the one hemisphere of the cosmos and fills the hemisphere, always stationed opposite its own reflection; on the other hand (there is) the visible sun, which is its reflection in the other hemisphere, namely the one filled with air mixed with heat, arising from the circular earth through a reflection onto the crystal-like Olympus (i.e. heaven), and carried around with it by the motion of the fiery (element); to sum up in a brief phrase, the sun is a reflection of the fire around the earth.
- 14 Epicurus (declares that it is) an earthy concentration inflamed by the fire in its cavities in the manner of a pumice-stone or sponge.
- 15 Parmenides (declares that) the sun and the moon have been separated off from the Milky Way, the former from the more rarefied mixture which is hot, the latter from the denser (mixture) which is cold.

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Democritus** fr. 68B5 DK *ap.* D.L. 9.41 (from the *Mikros Diakosmos*), Φαβω-  
 ρίνος δέ φησιν ἐν Παντοδαπῇ ἱστορίᾳ λέγειν Δημόκριτον περὶ Ἀναξαγόρου ὡς  
 οὐκ εἴησαν αὐτοῦ αἱ δόξαι αἶ τε περὶ ἡλίου καὶ σελήνης, ἀλλὰ ἀρχαῖαι, τὸν δ'  
 ὑφηρῆσθαι. **Plato** *Ap.* 26b (about Socrates), ἐπεὶ τὸν μὲν ἥλιον λίθον φησὶν εἶ-  
 ναι, τὴν δὲ σελήνην γῆν. **Aristotle** *Ph.* 2.1 193b26–29, εἰ γὰρ τοῦ φυσικοῦ τὸ  
 τί ἐστὶν ἥλιος ἢ σελήνη εἰδέναι, τῶν δὲ συμβεβηκότων καθ' αὐτὰ μηδὲν, ἄτοπον,  
 ἄλλως τε καὶ ὅτι φαίνονται λέγοντες οἱ περὶ φύσεως καὶ περὶ σχήματος σελήνης  
 καὶ ἡλίου. **Epicurus** *ap.* D.L. 10.90, see above ch. 13; cf. **Lucretius** 5.596–  
 613, nam licet hinc mundi patefactum totius unum largifluum fontem scatere  
 atque erumpere lumen, ex omni mundo quia sic elementa vaporis undique  
 convenient ... est etiam quoque uti non magno solis ab igni aera percipiat  
 calidis fervoribus ardor ... forsitan et rosea sol alta lampade lucens possideat  
 multum caecis fervoribus ignem circum se ...; cf. also **Diogenes of Oenanda**  
 fr.13 III 13–IV 10 Smith, ἐνδέχεται τοιγαροῦν τὸν ἥλιον ἀνθρακῶδη τινὰ κύ-  
 κλον [εἶναι καὶ] λεπτὸν ἄκρως, [ὑπὸ τε τῶν] πνευμάτων αἰω[ρούμενων] πηγῆς τε  
 ἐπέχ[οντα] τρό[πον], τοῦ μὲν ἀ[πορέοντος] ἐξ αὐτοῦ πυρὸς, τοῦ δὲ εἰσ[τρέοντος] ἐκ  
 τοῦ [περιέχον]τος κατὰ μείκρ[ομερεῖς] συνκρίσεις διὰ [τὴν] τοῦτου] πολυμυγίαν  
 ... **Stoics** *ap.* D.L. 7.133, ἐτέραν δ' αὐτοῦ (sc. τοῦ περὶ τοῦ κόσμου λόγου) σκέ-  
 ψιν εἶναι ἥτις μόνους τοῖς φυσικοῖς ἐπιβάλλει, καθ' ἣν ζητεῖται ἢ τ' οὐσία αὐτοῦ

καὶ εἰ ὁ ἥλιος καὶ οἱ ἀστέρες ἐξ ὕλης καὶ εἶδους. **Posidonius** fr. F18 E.-K., ὁ μὲν γὰρ (sc. φυσικός) ἀπὸ τῆς οὐσίας ἢ τῆς δυνάμεως ἢ τοῦ ἁμεινον οὕτως ἔχειν ἢ ἀπὸ τῆς γενέσεως καὶ μεταβολῆς ἕκαστα ἀποδείξει. **Hermogenes** *Progymn.* 11 25.8 Rabe (example of θέσις), εἰ ὁ ἥλιος πῦρ; same example at **Theon** *Progymn.* 17.31. **Lucian** *Icar.* 20 (see further on ch. 25), οὐ γὰρ ἱκανὰ ἦν αὐτοῖς ἃ περὶ αὐτοῦ εἰρήκασιν τοῦ ἡλίου, λίθον αὐτὸν εἶναι καὶ μύδρον διάπυρον. **Ps.Plutarch** *De Homero* 105 Kindstrand, καὶ ἐπὶ τούτῳ ὁ Ζεὺς αὐτὸν παρακαλεῖ “Ἡέλι’, ἧ τοι μὲν σὺ μετ’ ἀθανάτοισι φάεινε | καὶ θνητοῖσι βροτοῖσιν ἐπὶ ζεῖδωρον ἄρουραν” (*Od.* 12.385–386), ἐξ ὧν δηλοῖ ὅτι οὐ πῦρ ἐστὶν ὁ ἥλιος ἀλλ’ ἐτέρα τις κρείσσων οὐσία· ὅπερ καὶ Ἀριστοτέλης ὑπέλαβεν, εἴ γε τὸ μὲν πῦρ ἐστὶν ἀνωφερὲς καὶ ἄψυχον καὶ εὐδιάλειπτον καὶ φθαρτόν, ὁ δ’ ἥλιος κυκλοφορητικός καὶ ἔμψυχος καὶ αἰδῖος καὶ ἀφθαρτος. **Ambrose** *Exam.* 2.3.14, tantum autem inest illis impugnandae veritatis studium, ut solem ipsum negent calidae naturae esse; eo quod albus sit, non rubicundus, aut rutilus in speciem ignis. et ideo aiunt quod nec ignitus natura sit, et si quid habet caloris, ferunt ex nimio motu conversionis accidere. **Stobaeus** *Ecl.* 1.25.6–7, Εὐριπίδης πῦρ εἶναι τὸν ἥλιον ... Ὅμηρος μὴ εἶναι πῦρ τὸν ἥλιον, ἀλλὰ φῶς καθαρώτατον ... **Isidore of Seville** *De rer. nat.* 15, de natura solis. **Johannes Tzetza** *Comm. in Arist. Nubes* 102 4.402 Holwerda (refers to various questions on the sun).

Aëtius *Placita* 2.21  
Περὶ μεγέθους ἡλίου

WITNESSES

Ps.Plutarch 2.21, Eusebius 15.24, ps.Galen 63, Qusṭā Ibn Lūqā 2.21  
Stobaeus 1.25.1c<sup>g</sup>, 3<sup>ef</sup>  
Theodoret 1.97, 4.22  
Cf. Achilles 20, *Isagoge bis excerpta* 17

ANALYSIS

1. Just as in the case of the stars and later the moon, after discussing the sun's οὐσία, A turns to other questions. The first concerns its size (cf. 2.26 on the moon, not discussed in relation to the cosmos or the stars).<sup>375</sup> The sequence is again clearly influenced by the Aristotelian doctrine of the categories, substance followed by quantity.<sup>376</sup>

2. P preserves four brief doxai:

κα'. Περὶ μεγέθους ἡλίου

- P2.21.1 Ἀναξίμανδρος τὸν μὲν ἥλιον ἴσον τῇ γῇ εἶναι, τὸν δὲ κύκλον, ἀφ' οὗ τὴν ἐκπνοὴν ἔχει καὶ ἐφ' οὗ φέρεται, ἑπτακαίκοσαπλασίονα τῆς γῆς.  
P2.21.2 Ἀναξαγόρας πολλαπλασίονα Πελοποννήσου.  
P2.21.3 Ἡράκλειτος εὖρος ποδὸς ἀνθρωπίου.  
P2.21.4 Ἐπίκουρος πάλιν φησὶν ἐνδέχεσθαι τὰ προειρημένα πάντα ἢ τηλικούτον ἡλίκος φαίνεται, μικρῷ <τινι> μείζω ἢ ἐλάττω.

There are no variations in the tradition of P in relation to the title. The most important variant relates to the final doxa. The text in P gives a double doxa for Epicurus joined by ἢ. Although the doxa is not wholly impossible as it stands, the fact that (1) EG (but not Q) delete the first

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<sup>375</sup> It was probably discussed in relation to the earth in Book III. Cf. the title of S 1.33, but unfortunately the text has been lost. Diels *DG* 62 rightly surmised that P may have deleted a chapter here (cf. also Mansfeld (1992a) 103). The earth is in fact the primary standard by which sun and moon are measured in the two chapters in Book II.

<sup>376</sup> Cf. Mansfeld (1992a) 92–93 and above Part I sect. 1.



part and (2) ST preserve no trace of it amply justify Diels' decision to bracket these words (followed by Mau and Lachenaud). He judges that they were interpolated from the following chapter. Only the word *πάλιν* is a puzzle. Presumably it refers back to A 2.2.5\* and 2.13.15\*, i.e. it is a semi-intelligent interpolation. On the other hand the addition of *καὶ ὅποῖος τοῦ ἡλίκου* in E, though perhaps supported by G's *οἷος*, is probably unjustified, since it disturbs the chapter's emphasis on the quantitative. Some further interesting modifications also occur. G changes the Anaxagorean doxa to *πολυπλάσιον τῆς γῆς*, no doubt thinking that an important option would otherwise be left out. Something similar appears to happen in Q, who may not have recognized the word Peloponnese and supplies 'von jener', i.e. 'than the earth'. As we shall see, however, the correctness of PE is confirmed by T. Q, who must have known the equivalence of views of Heraclitus and Epicurus, adds the name of Epicurus to the Heraclitean doxa, with the awkward result that two Epicurean views are presented in a row.<sup>377</sup>

3. When S's exercise in coalescence is disentangled, four doxai emerge:

- 1.25 title    *Περὶ οὐσίας ἡλίου καὶ μεγέθους σχήματός τε καὶ τροπῶν καὶ ἐκλείψεως καὶ σημείων καὶ κινήσεως.*
- 1.25.1c  
S1            *Ἀναξίμανδρος*  
              — *καὶ τὸν μὲν ἥλιον ἴσον εἶναι τῇ γῇ· τὸν δὲ κύκλον ἅψ' οὗ τὴν ἐκπνοὴν ἔχει καὶ ὑψ' οὗ περιφέρεται εἶναι τοῦ προειρημένου μεγέθους.*
- 1.25.1g  
S2            *Ἡράκλειτος (καὶ Ἐκταῖος)*  
              — *τὸ δὲ μέγεθος ἔχειν εὖρος ποδὸς ἀνθρωπείου.*
- 1.25.3c  
S3            *Ἐμπεδοκλῆς*  
              — *ἴσον δὲ τῇ γῇ τὸν κατὰ τὴν ἀνταύγειαν.*
- 1.25.3f  
S4            *Ἐπίκουρος*  
              — *τηλικούτον δὲ ἡλίκος φαίνεται, ἢ μικρῶ τι μείζω ἢ ἐλάττω.*

Yet again we see how S's method of excerpting has led him to modify the text that he is copying out. The concluding part of the Anaximandran doxa is altered because it is so close to the previous doxa in 2.20. S overlooks the fact that in 2.20 A speaks of a circle 28 times as large

<sup>377</sup> Unfortunately there is no comment on this by Daiber *ad loc.*

as the earth, but here the text reads 27 times as large (confirmed by T).<sup>378</sup> The Anaxagorean doxa recorded in P2 is accidentally omitted. S should have included it in the cluster at 1.25.3a. In the case of S2 the double name-label at the head of the cluster, which was derived from ¶20.6\*, does not fit the remaining doxai, which are all the view of Heraclitus only. S3 is an additional doxa corroborated as we shall see by T. The final Epicurean doxa agrees with E's short version against PQ. Of course the original sequence and systematics are entirely obscured.

4. Remarkably T draws on this chapter twice. In 1.93–98 he discusses various disciplines in which people place their trust or faith (πίστις), such as grammar, geometry and astronomy. Of course this trust does not measure up to the faith which precedes knowledge in Christianity, because in the case of the last-mentioned discipline there is much argumentative strife (λογομαχία) among its practitioners when they present their views. T first gives the example of cosmic distances (cf. 2.31 below) before turning to the size of the sun as a second example:

*GAC* 1.97–98, 27.25–28.5

καὶ αὐτὸ πάλιν περὶ ἡλίου λογομαχία παρ' ἐκείνοις πολλή.

- T1a Ἀναξίμανδρος μὲν γὰρ καὶ Ἀναξίμενης ἑπτακαιοκοσαπλασίονα  
τῆς γῆς τοῦτον ἔφασαν εἶναι,  
T2a Ἀναξαγόρας δὲ Πελοποννήσου μείζονα,  
T3a Ἡράκλειτος δὲ ὁ Ἐφέσιος ποδιαῖον.  
τίς οὖν ἄρα ἀξίως τὴν τοιαύτην διαφωνίαν γελάσειεν;

The second text follows on from the doxai on the sun's οὐσία analysed in 2.20:

*GAC* 4.22, 106.1–7

καὶ μεγέθους δὲ πέρι καὶ σχήματος πολλὴ παρ' αὐτοῖς διαμάχη ...

- T1b καὶ Ἀναξίμανδρος μὲν ἑπτακαιοκοσαπλασίῳ τῆς γῆς τοῦτον ἔφησεν  
εἶναι,  
T4 Ἐμπεδοκλῆς δὲ ἴσον τῇ γῇ,  
T2b ὁ δὲ Ἀναξαγόρας Πελοποννήσου μείζονα,  
T2c Ἡράκλειτος δὲ ποδιαῖον.

<sup>378</sup> The discrepancy between the readings 28× and 27× of course has given rise to much discussion; it can be explained in terms of the outside circumference (28× in 2.20) and the inside circumference (27× in 2.21, note the words ἀφ' οὗ), it being assumed that the circumference of the circle is the same as that of the earth. We note that one of the mss. of E also alters to 28× in order to bring the doxa into line with the previous chapter.

T joins together the chapters on the sun's size and shape and in fact summarizes the latter first (see ch. 22). He adds the Empedoclean doxa to the three already used in 1.97 and so confirms the evidence of S. Once again the emphasis is on the conflict (διαμάχη) between the various philosophers.

Of considerable interest is the fact that in the first text (only) the name-label of Anaximenes is added to that of Anaximander. This is contrary to all our other witnesses. This is a good example of the difficulty we have in determining what T can add to our knowledge of A.<sup>379</sup> It is possible that the name-label was originally present in A, but that it was left out by P in his abridgement and by S in his process of coalescence (as we saw above double labels are a constant problem). But it seems more likely that it has been carelessly added here, since the Anaximandran doxa is really too idiosyncratic to be shared with anyone else. Moreover, there are two other pieces of adventurous, if careless, adaptation. In both texts Anaximander is recorded as saying that the sun's size is 27 times the earth's, whereas it is the sun's *ring* that is so large. As we shall see, this modification may well be deliberate. Secondly, the Empedoclean doxa is simplified, so that the sun *tout court* is equal to the earth, not the apparent sun reflected from the crystalline vault.

5. The evidence presented in Ach is very brief. It is just the first two lines of a chapter (much longer than that in A) entitled Περί μεγέθους ἡλίου.

*Isagoge* 20, 36.6–8 Maass ~ 29.8–9 Di Maria

Ach1	μέγεθος ἡλίου μείζον γῆς φασιν.
Ach2	καὶ οἱ μὲν ποδιαῖον
Ach3	οἱ δὲ ὀκταπλασίονα,
Ach4	οἱ δὲ ἐννεακαίδεκαπλασίον(α), φέρεσθαι δὲ αὐτόν ...

The title is identical to that in A. All four views are presented anonymously. The first, that the sun is larger than the earth, is in fact missing in A. The next view, recognizably that of Heraclitus, uses the adjective ποδιαῖος (also used by T) to abbreviate the longer phrase in PS.<sup>380</sup> It of course contradicts the first doxa, since a foot is a tiny measure. The next two doxai do continue from the first and give

<sup>379</sup> The question discussed at some length in Frede (1999) in response to Vol. I.

<sup>380</sup> On which see below text at n. 383.

concrete numbers. But after this the rest of the chapter deals with the sun's motion in astronomical terms without any doxographical references. We will return to this evidence further below.

A further snippet on this subject is found in the so-called *Isagoga bis excerpta* 17. See the text cited in ch. 20 sect. 7. Here the sun is 18 times the earth, which might be derived from Ach (coalescing Ach3 & 4 as it were) or may have a separate provenance. A comment is added on its shape, which does not correspond to A 2.22.

Finally there is some significant evidence in Philo which goes back to the anterior doxographical tradition (cf. ch. 11 sect. 4(3)). The question he uses to illustrate the uselessness of astronomical enquiry concerns the sun's size (*Somn.* 1.53, 3.216.10–12 C–W):

φησὶν οὖν ὁ ἱερὸς λόγος τῷ κατασκόπῳ τῶν τῆς φύσεως  
πραγμάτων· τί περὶ ἡλίου ζητεῖς,

Ph1	εἰ ποδιαῖός ἐστιν,
Ph2	εἰ τῆς γῆς μείζων ἀπάσης,
Ph3	εἰ πολλαπλάσιος αὐτῆς;

Philo gives three doxai, of which only the first corresponds to what we find in A. The brief mention of the question of the sun's size at *Mut.* 67 no doubt has the same background (text below).

6. There can be little doubt, therefore, that A's chapter had five doxai in the order found in P, with the addition of the Empedoclean doxa preserved in S and T in second place. Formally the chapter presents a straightforward diaeresis with three basic positions, of which the first and third are sub-divided into two related views. In the first the sun is large (at least as large as the earth), in the opposite view the sun is tiny; in between is the opinion that the sun is of moderate size (i.e. smaller than the earth). This amounts to a type B diaeresis, i.e. two opposed positions mediated by a third in between. The second doxai in the first and third position both have a subjective or epistemological element involving reflection or appearance. There is also a general movement in the chapter from large to small, indicated in the diagram below by an arrow. The chapter's symmetry may well be intentional (exactly the same schema is found in 2.11). But in order to view the presentation in a broader perspective it will be necessary to call on the vast amount of parallel material that is available.<sup>381</sup>

<sup>381</sup> Nearly all of this vast material is collected and summarized by Pease in his

7. As emerges very clearly in our remarkably long list of dialectical-doxographical parallels, the problem of the sun's size was a prominent theme in ancient debates. Time and time again it is used as an illustration of a theoretical problem (θέσις, *quaestio infinita*, cf. the texts of Hermagoras, Cicero, Quintilian cited below) or of a question dealt with both by philosophers and astronomers (cf. Stoics, Posidonius, Seneca). Moreover the epistemological problem raised by the Heraclitan–Epicurean view that its size was as it appeared to perception was a stock topic (especially frequent in Cicero). For some examples of how these texts use a diaeresis to deal with the question we note the following (texts below):

(a) Alexander of Aphrodisias in *Metaph.* 784.7–10 gives as an example that one disputant in a dialectical discussion argues that that sun is μείζων τῆς γῆς, the other ἐλάττω. The view that they are the same size is not mentioned. Alexander, who explicitly calls the question a θέσις, argues that the disputant defending the second position may be refuted by scientific proofs and concede the matter, or he may stubbornly continue to adhere to his own position. The implication is that the former position is generally accepted as proven, but that the latter may still find adherents.

(b) As noted above, Philo lists three positions: that the sun is very small, that it is larger than earth, and that it is many times larger than earth.

(c) Cicero *Div.* 2.10 in addressing the limits of divination states that it cannot determine whether the sun is larger than the earth or as it appears. The antithesis is taken over in a similarly negative passage by Lactantius, who accentuates it by adding ‘many times’ larger. The same contrast is made by Tertullian, using as examples the views of Epicurus (*pedalem* = ποδιαῖος) and the Peripatetics (larger than the earth).

In light of all this material it would seem that in the dialectical context there were usually a number of positions schematically outlined. The views are not generally given in an absolute form, but in terms of a comparison with the earth. If two positions are given we get a type A diaeresis, if three (like in our chapter) we get a type B diaeresis. The latter is what we get in the present chapter with its three basic options: large–quite large–small. In principle, of course, there could easily be more positions. It is in fact most surprising that A does not exploit the

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magisterial notes on Cic. *Div.* 2.10–11, *N.D.* 2.92; cf. also Reid on *Ac.* 2.82. We have also been aided by the article of Barnes (1989), although it focuses primarily on the debates between philosophers and scientists.

obvious case that the sun is much larger than the earth.<sup>382</sup> This view is referred to by Ach in his brief summary. It is in fact also included in the parallel chapter on the moon at A 2.26.1\*, where the Stoic view is recorded that the moon is larger than the earth, *as is the sun*. There are thus three possible explanations as to why it is missing here: (1) A committed an oversight; (2) he followed the dialectical tradition in not going beyond three basic positions; (3) originally his chapter did include this possibility, but it has gone missing. For the final position one could appeal to T, who in his second text has four positions rather than just the three we find in A (larger, as large, smaller, very small). This shows how well the bishop understands the method of the *Placita*. But he has to misrepresent the view of Anaximander to achieve his neat schema. We incline to the second view. Certainly it is not justified to insert this missing option in our reconstructed text.

Some more comments on the doxai are called for. A apparently decided to include more than just the minimum amount of material (contrast only three doxai on the moon in 2.26\*). The doxa of Anaxagoras is included (also found at D.L. 2.8 and Hippolytus *Adv. haer.* 1.8.8), and also that of Empedocles (not found elsewhere, contrast D.L. 8.77 καὶ τὸν ἥλιόν φησι πυρὸς ἄθροισμα μέγα καὶ τῆς σελήνης μείζω). The Heraclitean doxa is given as a quote from his writings.<sup>383</sup> It has now been confirmed by the same quote in the Derveni papyrus, although the word order is slightly different (text below). The abbreviation of the doxa to a single adjective ποδιαῖον (sc. μέγεθος) as found in T and Ach is common elsewhere (cf. already Aristotle *de An.* 3.3 428b3, Philo *Somn.* 1.53, Cleomedes *Cael.* 2.1 *passim*). The linkage between Heraclitus and Epicurus is a natural one.<sup>384</sup> The Epicurean doxa is already found in a verbally identical form in Cicero *Fin.* 1.20 (*tantum enim esse censet quantus videtur, vel paulo aut maiorem aut minorem*).<sup>385</sup> But Cicero wants to contrast Epicurus unfavorably with Democritus, so also mentions the

<sup>382</sup> Admittedly Anaximander's solar circle is recorded as much larger, but that hardly represents the view that the sun is that size.

<sup>383</sup> Of course ancient Greek had no quotation marks, but the reader would have picked up the deviation from the normal language of doxographies.

<sup>384</sup> The view was traditional, as the Aristotelian texts show. Nevertheless it is difficult not to think that Epicurus was thinking of Heraclitus' doctrine when he declared the sun to be the size that it seems to us; cf. Sedley (1976) 52–53.

<sup>385</sup> On the Epicurean text see Mansfeld (1994) 45–47, who points out that the term ἔνσθημα refers to the kind of refutation advocated by Aristotle and Theophrastus in dialectical contexts. It is possible that the corrupt text in P 1.*praef.* refers to this question if the reading of Q is accepted; see further Part I sect. 6 n. 127.

view that according to him the sun was only a foot in size.<sup>386</sup> A does not do this, though of course the juxtaposition with the Heraclitean doxa is suggestive. The Epicurean doxa adds an epistemological element to the chapter, corresponding to the frequent use of this example in philosophical discussions from Aristotle onwards. For this reason it is placed last in the chapter; cf. the ‘modal’ views already given in 2.2.5\*, 2.13.15\* and also in the following chapter 2.22.4\*.<sup>387</sup> It is probably also no coincidence that both Empedocles’ and Epicurus’ doxai, as ‘second’ views, involve the *phenomenal* sun. This is the kind of symmetry that A appears to be rather fond of.

8. We have yet to take into full account the evidence of Ach. His doxai are skimpy in the extreme, but as we noted above (sect. 5) do include the position missing in A and two doxai involving numbers (eight and nineteen times the size of the earth). Both doxai are found elsewhere, the former in Macrobius (but in a context that is scientific rather than doxographical), the latter in Cicero *Ac.* 2.82.<sup>388</sup> The Ciceronian text is significant. Not only does it include the Heraclitean doxa (which Cicero puts forward as his own view—note the verb *videtur* indicating that it is only *probabile*), but it also attributes the numerical doxa to the astronomers (*mathematici*). These are prominent in A’s Book II, occurring 6 times (15.5\*, 16.2\*, 16.6\*, 29.7\*, 31.2\*; elsewhere only at P 5.18.6). Their presence recalls the pronouncement of Posidonius that both the philosopher and the astronomer aim to prove the same point (though proceeding by different routes), but even more the sententious remark of Seneca in *Ep.* 88, *magnum esse solem philosophus probabit; quantus sit mathematicus* (cf. also the example of Archimedes with his diagrams used by Cicero at *Ac.* 2.116). It is important to note that a good deal of research had been done by astronomers on the size of the sun. It is already referred to by Aristotle *Mete.* 1.8 345b1–9, and much further material is found in writers such as Archimedes, Ptolemy and

<sup>386</sup> Probably unfairly. This claim is not found in the extant writings or fragments of Epicurus. Cf. Algra (2000) 186: ‘... both in Cicero and in Cleomedes we are arguably dealing with nothing more than an inference made by these authors themselves on the basis of the Epicurean claim that the sun is as large *as it appears*’ (his italics).

<sup>387</sup> The role of the ἐνδεχόμενον is not emphasized here (as we saw above the text in P must be rejected), though the theory of multiple causation is certainly relevant; cf. Algra (2000) 183. But note the text in P, which we decided above (sect. 2) to be an interpolation from the following chapter.

<sup>388</sup> We take *amplius duodeviginti partibus* to mean ‘at least 19 times’. Note also the number 18 in *Isag. bis exc.* (see above sect. 5) and *Schol. Arat.* 319.16 Martin (text below).

Cleomedes, as well as an extant treatise by Aristarchus (references and texts below).<sup>389</sup> The methods and precision of this scientific research are of course far removed from the method of doxography. But the divide is not absolute. We saw that Ach does have two numbers, and we will see that in A numbers are found in the chapters on distances (2.31) and the Great year (2.32). Oddly the numbers 8 and 19 found in Ach recur in A 2.32.3–4\*, but this may be a pure coincidence. A has chosen not to include a reference either to astronomers or to numbers, even though this material was very likely available to him.

9. This short chapter is one of the most interesting in Book II, because it shows how well-embedded A's compendium is both in the doxographical tradition and more generally in Greco-Roman literary culture. If we take into account the exact verbal parallelism between A and Cicero *Fin.* 1.20 in the case of Epicurus' doxa noted above (virtually repeated in *Ac.* 2.82),<sup>390</sup> together with the evidence of Ach and Philo (whose *πολλαπλάσιος* may well be a shorthand way of describing the 8× and 19× in Achilles and Cicero), the conclusion is inescapable that all three are drawing on a common doxographical tradition dating back at least to the middle of the 1st cent. BCE. The question of the sun's size was often used in rhetorical contexts as an example of a philosophical question. It also served to illustrate the epistemological question of the difference between appearance and reality. Moreover, it had been the subject of extensive scientific research. Against this background A's treatment is not entirely satisfactory. It is puzzling that he does not include the systematic option that the sun is larger than the earth, which by his time had been the dominant view in scientific circles for centuries.<sup>391</sup> The omission clearly disquieted T and G, who both proceed to introduce it through a (probably) deliberate rewriting of A and P respectively. Our doxographer reveals a lack of interest in exact science, compensated it would seem by a certain interest in unusual views.

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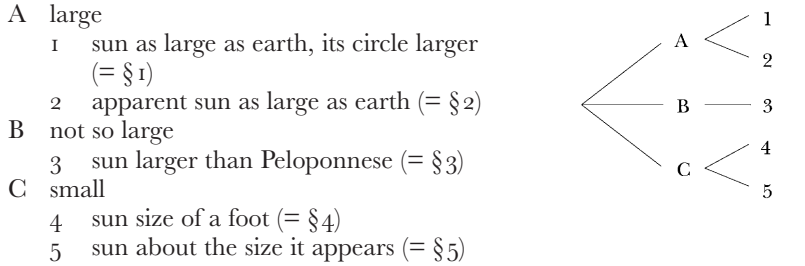
<sup>389</sup> But the geometrical method and content of this treatise could not be further removed from the doxographical tradition. No reference is made to the views of philosophers or scientists.

<sup>390</sup> Which in turn goes back to the formulation of Epicurus himself; see D.L. 10.91 (text cited below).

<sup>391</sup> E.g. Pliny *Nat. Hist.* 2.49ff., Macrobius *Comm. in Somn. Scip.* 1.20.8ff. = Posidonius fr. F116 E.-K. See further Barnes (1989).



STRUCTURE (see above sect. 6)



RECONSTRUCTED TEXT

κα'. Περί μεγέθους ἡλίου

- 1 Ἀναξίμανδρος τὸν μὲν ἥλιον ἴσον τῇ γῇ εἶναι, τὸν δὲ κύκλον, ἀφ' οὗ τὴν ἐκπνοήν<sup>1</sup> ἔχει καὶ ἐφ' οὗ φέρεται, ἑπτακαίκοσαπλάσιονα τῆς γῆς<sup>2</sup>.
- 2 Ἐμπεδοκλῆς ἴσον τῇ γῇ τὸν κατὰ τὴν ἀνταύγειαν.
- 3 Ἀναξαγόρας πολλαπλασίονα<sup>3</sup> Πελοποννήσου<sup>4</sup>.
- 4 Ἡράκλειτος<sup>5</sup> εὖρος ποδὸς ἀνθρωπείου.
- 5 Ἐπίκουρος<sup>6</sup> τηλικούτων ἡλίκος<sup>7</sup> φαίνεται, ἥ<sup>8</sup> μικρῷ τινι<sup>9</sup> μείζω ἢ ἐλάττω.

- 1 πνοήν E
- 2 τοῦ προειρημένου μεγέθους S, i.e. ut in capite priori, sed illic ὀκτωκαίκοσαπλάσιονα
- 3 μείζονα T bis
- 4 πολλαπλασίον γῆς G, 'Vielfaches (Pl.) von jener (Grösse der Erde)' Q
- 5 'Epikuros und Herakleitos' Q
- 6 πάλιν φησὶν ἐνδέχασθαι τὰ προειρημένα πάντα ἢ ins. P, secl. Diels
- 7 PQS, ἡλίκος καὶ ὁποῖος E, οἷος G
- 8 SEGP<sup>1</sup>, om. P<sup>2</sup>
- 9 S, τι E, om. P

§1 12A21 DK; §2 31A56 DK; §3 59A72 DK; §4 22B3 DK; §5 fr. 345 Usener

21. On the size of the sun

- 1 Anaximander (declares that) the sun is equal to the earth (in size), and that the circle out of which it has its vent and on which it moves, is 27 times the earth.
- 2 Empedocles (declares that it is) equal to the earth (in size), namely the sun (that appears) in virtue of the reflection.

- 3 Anaxagoras (declares that it is) many times larger than the Peloponnese.
- 4 Heraclitus (declares that it is) the breadth of a human foot.
- 5 Epicurus (declares that it is) the size that it appears, or a just little larger or smaller.

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Derveni papyrus** col. IV 5–8 Kouremenos–Parássoglou–Tsantsanoglou, κατὰ [ταῦτ] ἃ Ἡράκλειτος μα[ρτυρούμενος] τὰ κοινὰ κατ[αστρέ]φει τὰ ἰδ[ί]α· ὅσπερ ἵκελα [ἀστρο]λόγῳι λέγων [ἔφη:] “ἥλι[ος ...]. οὐ κατὰ φύσιν ἀνθρώ[πτου] εὖρος ποδός [ἐστι,] τὸ μ[έγεθος] οὐχ ὑπερβάλλον ...” **Philip of Opus** *Epin.* 983a, καὶ μὴν ὅτι γε δικαίως ἔμψυχα αὐτὰ λέγομεν, πρῶτον τὸ μέγεθος αὐτῶν διανοηθῶμεν. οὐ γάρ, ὡς σμικρὰ φαντάζεται, τηλικαῦτα ὄντως ἐστίν, ἀλλ’ ἀμύχανον ἕκαστον αὐτῶν τὸν ὄγκον—πιστεῦσαι δ’ ἄξιον· ἀποδείξουσιν γὰρ ἱκαναῖς λαμβάνεται—τὸν γὰρ ἥλιον ὅλον τῆς γῆς ὅλης μεῖζω διανοηθῆναι δυνατόν ὀρθῶς, καὶ πάντα δὴ τὰ φερόμενα ἄστροι θαυμαστόν τι μέγεθος ἔχει. **Aristotle** *Mete.* 1.3 339b34, ὅσοι δὲ πῦρ καθαρὸν εἶναι φασὶ τὸ περιέχον καὶ μὴ μόνον τὰ φερόμενα σώματα, τὸ δὲ μεταξὺ γῆς καὶ τῶν ἀστρον ἀέρα, θεωρήσαντες ἂν τὰ νῦν δεικνύμενα διὰ τῶν μαθημάτων ἱκανῶς ἴσως ἂν ἐπαύσαντο ταύτης τῆς παιδικῆς δόξης· λίαν γὰρ ἀπλοῦν τὸ νομίζειν μικρὸν τοῖς μεγέθεσιν εἶναι τῶν φερόμενων ἕκαστον, ὅτι φαίνεται θεωροῦσιν ἐντεῦθεν ἡμῖν οὕτως. *Mete.* 1.8 345b1, εἰ καθάπερ δείκνυται νῦν ἐν τοῖς περὶ ἀστρολογίαν θεωρήμασιν, τὸ τοῦ ἡλίου μέγεθος μεῖζόν ἐστιν ἢ τὸ τῆς γῆς καὶ τὸ διάστημα πολλαπλασίως μεῖζον τὸ τῶν ἀστρον πρὸς τὴν γῆν ἢ τὸ τοῦ ἡλίου, καθάπερ τὸ τοῦ ἡλίου πρὸς τὴν γῆν ἢ τὸ τῆς σελήνης ...; *de An.* 3.3 428b3 οἷον φαίνεται μὲν ὁ ἥλιος ποδιαῖος, πιστεύεται δ’ εἶναι μεῖζον τῆς οἰκουμένης; cf. also *Somn.* 1 458b28, 460b18. **Eudemos** *ap. Simp. in Cael.* 471.2–11, see ch. 15. **Epicurus** *ap. D.L.* 10.91, τὸ δὲ μέγεθος ἡλίου τε καὶ τῶν λοιπῶν ἀστρον κατὰ μὲν τὸ πρὸς ἡμᾶς τηλικούτον ἐστὶν ἡλικόν φαίνεται· κατὰ δὲ τὸ καθ’ αὐτὸ ἥτοι μεῖζον τοῦ ὁρωμένου ἢ μικρῷ ἔλαττον ἢ τηλικούτον τυγχάνει. οὕτω γὰρ καὶ τὰ παρ’ ἡμῖν πυρὰ ἐξ ἀποστήματος θεωρούμενα κατὰ τὴν αἴσθησιν θεωρεῖται. καὶ πᾶν δὲ τὸ εἰς τοῦτο τὸ μέρος ἐνσθημα ῥαδίως διαλυθήσεται ἔάν τις τοῖς ἐναργήμασι προσέχη, ὅπερ ἐν τοῖς περὶ φύσεως βιβλίοις δείκνυμεν; cf. **Lucretius** 5.564–565, 590–591, **Philodemus** *Sign.* 14–15 De Lacy. **Stoics** *ap. D.L.* 7.132, μία γὰρ σκέψει ἐπικοινωνεῖν αὐτοῦ (sc. τοῦ περὶ τὸν κόσμον λόγου) καὶ τοὺς ἀπὸ τῶν μαθημάτων, καθ’ ἣν ζητοῦσι περὶ τε τῶν ἀπλανῶν καὶ τῶν πλανωμένων, οἷον εἰ ὁ ἥλιός ἐστι τηλικούτος ἡλικός φαίνεται, καὶ ὁμοίως εἰ ἡ σελήνη ... **Aristarchus** *Περὶ μεγέθων καὶ ἀποστημάτων ἡλίου καὶ σελήνης.* **Hermagoras** *ap. Cic. Inv.* 1.6.8, cited at 2.2. **Archimedes** *Aren.* 9, μετὰ δὲ ταῦτα τὰν διάμετρον τοῦ ἁλίου τὰς διαμέτρου τὰς σελήνας ὡς τριακονταπλασίαν εἶμεν καὶ μὴ μεῖζονα, καίπερ τῶν προτέρων ἀστρολόγων Εὐδόξου μὲν ὡς ἐννεαπλασίονα ἀποφαινομένου, Φειδία δὲ τοῦ ἁμοῦ πατρὸς ὡς δὴ δωδεκαπλασίαν, Ἀριστάρχου δὲ πεπειραμένου δεικνύειν ὅτι ἐστὶν ἡ διάμετρος τοῦ ἁλίου τὰς διαμέτρου τὰς σελήνας μεῖζον μὲν ἢ ὀκτωκαιδεκαπλασίον, ἐλάττων δὲ ἢ εικοσαπλασίον· ἐγὼ δὲ ὑπερβαλλόμενος καὶ τοῦτον ... **Posidonius** *fr. F18 E.-K.*, πολλαχοῦ τοίνυν ταυτὸν κεφάλαιον ἀποδείξει προθήσεται ὃ τε ἀστρολόγος καὶ

ὁ φυσικός, οἷον ὅτι μέγας ὁ ἥλιος, ὅτι σφαιροειδής ἡ γῆ, οὐ μὴν κατὰ τὰς αὐτὰς ὁδοὺς βαδιοῦνται; *ap.* D.L. 7.144, τὸν μὲν ἥλιον ... καὶ μείζονα τῆς γῆς, ὡς ὁ αὐτὸς (sc. Ποσειδώνιος) ἐν τῷ ἔκτῳ τοῦ Φυσικοῦ λόγῳ. **Cicero** *De orat.* 2.66, si enim est oratoris, quaecumque res infinite posita sit, de ea posse dicere, dicendum erit ei, quanta sit solis magnitudo, quae forma terrae. *Div.* 2.10, num censes eos qui divinare dicuntur posse respondere sol maiorne quam terra sit an tantus quantus videatur? lunaque suo lumine an solis utatur? sol, luna quem motum habeat? quem quinque stellae, quae errare dicuntur? ... *Fin.* 1.20, sol Democrito magnus videtur, quippe homini erudito in geometriacque perfecto; huic (sc. Epicuro) pedalis fortasse: tantum enim esse censet quantus videtur, vel paulo aut maiorem aut minorem. *Ac.* 2.82, maiora fortasse quaeris. quid potest esse sole maius, quem mathematici amplius duodeviginti partibus confirmant maiorem esse quam terram? quantulus nobis videtur! mihi quidem quasi pedalis. Epicurus autem posse putat etiam minorem esse eum quam videatur, sed non multo ...; cf. 2.116 (Archimedes multibus partibus solem maiorem esse quam terram), 123, 126. **Philo** *Somn.* 1.53, see above; *Mut.* 67, μετέωρον τοίνυν ἀλληγοροῦντές φαμεν τὸν ἀπὸ γῆς ἑαυτὸν εἰς ὕψος αἴροντα καὶ ἐπισκοποῦντα τὰ μετάρσια, μετεωροπόλον τε καὶ μετεωρολογικόν, ἐρευνῶντα τί ἡλίου μέγεθος ... **Cleomedes** *Cael.* 2.1.1 Todd, Ἐπίκουρος δὲ καὶ οἱ πολλοὶ τῶν ἀπὸ τῆς αἰρέσεως τηλικούτων εἶναι τὸν ἥλιον ἀπεφήναντο, ἡλίκος φαίνεται, αὐτῇ τῇ διὰ τῆς ὀψεως φαντασίᾳ ἀκολουθήσαντες καὶ ταύτην τοῦ μεγέθους αὐτοῦ κριτήριον ποιησάμενοι. πάρεστιν οὖν ὁρᾶν τὸ ἀκόλουθον τῇ ἀποφάσει αὐτῶν. εἰ γὰρ τηλικούτος ἐστίν, ἡλίκος φαίνεται, οὐκ ἄδηλον, ὡς πολλὰ ὁμοῦ μεγέθη περὶ αὐτὸν γενήσεται ...; 2.1.339 ὅθεν ἄλλοι ἄλλο μέγεθος περὶ τὸν ἥλιον εἶναι ἀπεφήναντο, οὐδεὶς μέντοι τῶν φυσικῶν καὶ ἀστρολόγων μείονα τῆς προειρημένης τὴν διάμετρον ἔχειν αὐτὸν ἀπεφήνατο. τὸν δὲ Ἰππαρχὸν φασὶ καὶ χιλιοκαπεντηκονταπλάσιονα τῆς γῆς ὄντα αὐτὸν ἐπιδεικνύειν. πῶς ἂν οὖν ποδιαῖος εἴη κατὰ πᾶσαν ἔφοδον σχεδὸν ἐμμεθόδως γινομένην ἀπειρομεγέθης εὐρύσιζόμενος; and *passim*. **Seneca** *Ep.* 88.27, magnum esse solem philosophus probabit, quantus sit mathematicus, qui usu quodam et exercitatione procedit. **Lucian** *Par.* 11, see ch. 1. **Quintilian** *Inst. Or.* 3.6.42, his etiam ceteri status contineri dicuntur; quia et quantitas modo ad coniecturam referatur, ut: ‘maiorne sol quam terra’; 7.2.6 cited above on 2.1; cf. also 7.4.1 quantus sol. **Ptolemy** *Synt. math.* 5.16. **Galen**, see below on ch. 26. **Alexander of Aphrodisias** in *Met.* 784.7 Hayduck, δύο τινῶν προσδιαλεγομένων οἷον φέρε εἰπεῖν περὶ τοῦ ἡλίου, τοῦ μὲν λέγοντος ὅτι μείζων ἐστὶν ὁ ἥλιος τῆς γῆς, τοῦ δὲ ὅτι ἐλάττων ... **Tertullian** *Ad nat.* 2.4.15–16, sed Epicurus qui dixerat: ‘quae super nos, nihil ad nos,’ cum et ipse caelum inspicere desiderat, solis orbem pedalem deprehendit. adhuc scilicet frugalitas et in caelis agebatur. denique ut ambitio profecit, etiam sol aciem suam extendit; ita illum orbe maiorem Peripatetici denotaverunt. **Dio- genes Laertius** 7.85 (seventh trope of Aenesidemus), ὁ γοῦν ἥλιος παρὰ τὸ διάστημα (μικρὸς) [πόρρωθεν] φαίνεται (conj. Annas–Barnes ποδιαῖος). **Lac- tantius** *Div. Inst.* 3.3.4 (from Cicero), nam causas naturalium rerum disquirere aut scire velle sol utrumne tantus quantus videtur an multis partibus maior sit quam omnis haec terra. **Basil** in *Hex.* 6.9 105.6 μηδ’ ὅτι πηχυαῖος, 106.7 καὶ ἀπειροπλάσιον τοῦ φαινομένου, and see below ch. 26; cf. **Gregory of Nyssa** in *Hex.* 93a. **Schol. Arat. 319.10 Maass, cited above on 2.20; 319.16–320.1 Martin,**

ὥς καὶ ὁ ἥλιος παρὰ τοῖς μαθηματικοῖς ἐπιστεύθη τῆς πάσης οἰκουμένης ὀκτω-  
καιδεκαπλασίων ὄν, καὶ ἡ πᾶσα γῆ τοῦ μεγέθους αὐτοῦ ὀκτωκαιδέκατόν ἐστιν,  
καὶ ὅμως ἡ περιφέρεια αὐτοῦ οὐ πάνυ τι δοκεῖ μεγάλη εἶναι ... **Macrobius**  
*Comm. in somn. Scip.* 1.20.32, ergo ex his dicendum est solem octies terra esse  
maiores. haec de solis magnitudine breviter de multis excerpta libavimus.  
**Isidore of Seville** *De rer. nat.* 16, de quantitate solis et lunae.

Aëtius *Placita* 2.22  
Περὶ σχήματος ἡλίου

WITNESSES

Ps.Plutarch 2.22, Eusebius 15.25, ps.Galen 64, Qusṭā Ibn Lūqā 2.22,  
*Scholia Platonica* ad *R.* 498a  
Stobaeus 1.25.11dghi  
Theodoret 4.22  
Cf. Achilles 19

ANALYSIS

1. The next theme in the series on the sun concerns its shape, i.e. moving from a quantitative to a qualitative aspect in the sequence of categories. The same sequence is found on the moon (2.26–27), whereas in the case of the cosmos and the earth the doxographer moves directly from nature/essence to shape (2.2, P 3.10).

2. P presents us with four doxai:

κβ'. Περὶ σχήματος ἡλίου

- |         |  |
|---------|--|
| P2.22.1 | Ἀναξιμένης πλατὺν ὡς πέταλον τὸν ἥλιον.            |
| P2.22.2 | Ἡράκλειτος σκαφοειδῆ, ὑπόκυρτον.                   |
| P2.22.3 | οἱ Στωικοὶ σφαιροειδῆ, ὡς τὸν κόσμον καὶ τὰ ἄστρα. |
| P2.22.4 | Ἐπίκουρος ἐνδέχεσθαι τὰ προειρημένα πάντα.         |

Again there is no divergence on the title. As elsewhere E tends to greater compactness, leaving out τὸν ἥλιον in the first doxa. The Heraclitean doxa σκαφοειδῆ, ὑπόκυρτον ('bowl-like, somewhat convex') gives rise to problems in the later sources. G alters to φακοειδῆ, 'lentic-like' (if the reading is correct).<sup>392</sup> Q derives σκαφοειδῆ from σκάφος instead of σκάφης and translates 'Gestalt wie diejenige eines Schiffes ist

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<sup>392</sup> The same word is used of the phenomenal appearance of the moon at Plu. *Mor.* 288B. Remarkably Aristotle uses it in a discussion of alternative shapes of the cosmos at *Cael.* 2.4 287a20; cf. the parallels to ch. 2.

und gewölbt'.<sup>393</sup> The doxa is correctly preserved in a scholion on Plato *R.* 498a.<sup>394</sup>

3. The doxai in S must once again be disentangled:

- |            |  |
|------------|--|
| 1.25 title | Περὶ οὐσίας ἡλίου καὶ μεγέθους σχήματός τε καὶ τροπῶν καὶ ἐκλείψεως καὶ σημείων καὶ κινήσεως |
| 1.25.1c    |  |
| S1         | Ἀναξιμένης<br>—πλατὺν δ' εἶναι τῷ σχήματι.   |
| 1.25.1g    |  |
| S2         | Ἡράκλειτος (καὶ Ἐκκασίος)<br>—σκαφοειδῆ δ' εἶναι, ὑπόκυρτον.                                 |
| 1.25.1h    |  |
| S3         | Ἀλκμαίων πλατὺν εἶναι τὸν ἥλιον.   |
| 1.25.1i    |  |
| S4         | οἱ Πυθαγόρειοι σφαιροειδῆ τὸν ἥλιον.   |

It appears that S is somewhat careless in this chapter but does preserve extra material. The views of Anaximenes and Heraclitus are included in their respective clusters of doxai. In the former the words ὡς πέταλον found in P are not recorded. Alcmaeon on the other hand is listed separately, since this is the only place where his name-label occurs in the chapters on the sun. His doxa is the same as that of Anaximenes. The doxa of the Pythagoreans follows on directly from Alcmaeon. It is an abbreviated version of the Stoic doxa in P, which has been replaced by the excerpt on Chrysippus at 1.25.5. As we argued earlier,<sup>395</sup> this text is most likely taken from AD. Because the doxai are the same, it is very likely that S's method has resulted in the original double name-label being split up. The combination οἱ Πυθαγόρειοι οἱ Στωικοί is a bit awkward. It is possible that P has substituted the school name for an individual philosopher as occurred in ¶20 (Cleanthes), but there is no way of knowing. The final Epicurean doxa in P is not found in S. This differs from his procedure in the previous chapter, where at 1.24.10 he did include a similar 'modal' doxa. The omission is perhaps due to carelessness, or he may have felt that the formulation 'all the preceding affirmations' did not suit the build-up of his coalesced doxai.

<sup>393</sup> Again Daiber gives no comment on this.

<sup>394</sup> *Scholia Platonica* ad *R.* 498a, p. 240 Greene (cf. T442, 1181 Mouraviev). Rightly cited by Diels in the apparatus to his P column, since it is no doubt derived from the tradition of P. Greene reads σκαφοειδές without comment, whereas Diels printed σφαιροειδῆ. See further on 2.24.

<sup>395</sup> See ch. 20 sect. 3, n. 351.

4. T refers to the subject of this chapter only in the second of the two passages discussed in the previous chapter. In a chiasmic construction he inverses the order of the doxai of the two chapters, giving those in § 22 before those in § 21:

*GAC* 4.22, 106.1–4

καὶ μεγέθους δὲ πέρι καὶ σχήματος πολλὴ παρ' αὐτοῖς διαμάχη·

T<sub>1</sub> οἱ μὲν γὰρ αὐτὸν σφαιροειδῆ φασιν,

T<sub>2</sub> οἱ δὲ σκαφοειδῆ,

T<sub>3</sub> οἱ δὲ ἀρματιαίῳ τροχῷ παραπλήσιον· ...

As often is the case in T, the doxai are presented anonymously. The first two are recognizable as the Pythagorean/Stoic and the Heraclitean views, the former placed first because it is the dominant opinion. The third does not correspond to anything in P or S. We might be tempted to see here some additional information on A for which T is the only witness.<sup>396</sup> It is much more likely, however, that T has adapted it from Anaximander's doxa on the substance of the sun in 2.20. It is yet another example of the freedom with which he adapts his source-material.

5. Ach includes a brief report on the subject as part of his ch. 19 on the sun (so no separate chapter, unlike ch. 20 on the sun's size):

*Isagoge* 19, 46.27–29 Maass ~ 27.19–20 Di Maria

Ach<sub>1</sub> σχῆμα δὲ αὐτοῦ οἱ μὲν δισκοειδές,

Ach<sub>2</sub> Ἡράκλειτος δὲ σκαφοειδές,

Ach<sub>3</sub> Στωϊκοὶ δὲ σφαιροειδές εἶναι λέγουσιν.

The second and third views are clearly parallel to what we have found in PS. The first, without a label, uses the same adjective used in A for the shape of the moon (Empedocles, 2.27.4\*) and of the earth (Democritus at P 3.10.5). Maass *ad loc.* may well be right in identifying the doxa with the view of Anaximenes in A. Both a discus and a leaf are flat, and explain through analogy how the heavenly bodies float upon the air (cf. Hippolytus 1.8.4 on earth, sun, moon, stars, A 2.14.3\* on the stars). Perhaps in the anterior tradition there was a reading with two adjectives, i.e. δισκοειδῆ, πλατὺν ὡς πέταλον, analogous with the formulation of the Heraclitean doxa.

<sup>396</sup> Cf. our comment on the critique of M. Frede, ch. 21 n. 379.

6. In all probability, therefore, A's chapter had four doxai. Diels' double-column method obscures the reconstruction and results in two doxai too many. Formally the chapter shows strong similarities to the other four on the shape of the cosmos (§2), stars (§14), moon (§27), earth (P 3.10). The first three doxai constitute a list of shapes ascribed to the sun in the philosophical tradition, i.e. a type C diaeresis. The sequence of these three views is logical from the viewpoint of the physical shape, a bowl being midway between a flat disk and a sphere. Hence the arrow in the diagram below. The Epicurean 'modal' view, on the other hand, by refusing to restrict its approval to any single option, stands in a diaphonic relation to the others, i.e. a type A diaeresis. It takes up the last place, as we have already seen in §2 and §13. It is not indicated whether the basis of the opposition is physical (it can change its shape) or epistemological (it is not possible to determine what its real shape is). In the case of the Pythagorean–Stoic view the analogy with the shape of other bodies is given. Compare the Stoic doxai in 2.14.1\* (stars spherical, *καθάπερ τὸν κόσμον καὶ ἥλιον καὶ σελήνην*), 2.28.1\* (moon larger than earth, *ὥς καὶ τὸν ἥλιον*), 2.29.1 (moon spherical, *ὥς τὸν ἥλιον*). These cross-references suggest that, in the case of the Stoics at least, the original compiler drew his material from a source which dealt with the size and shapes of the heavenly bodies collectively, and not one by one as in the *Placita* (cf. for example Aristotle's treatment in *Cael.* 2.8, also in AD).<sup>397</sup>

7. Contrary to the question of the sun's size, its shape was in post-Socratic times an entirely non-controversial subject. Apart from the material in A and Ach, we have found no material recording divergence of views on this question. Epicurus does not touch on the subject in the *Ep. Pyth.*<sup>398</sup> If the sun is as it appears (cf. ch. 21 and the material collected there), it can hardly be disputed that it appears spherical (or at least circular). For Lucretius the sun is a *rota* (5.564), which implies that the 'modal' view recorded by A may not have become part of

<sup>397</sup> Kidd (1988) 457 surely draws a long bow when in a comment on D.L. 7.144 (text below) he wonders whether A may have derived the notice on the Pythagoreans from Posidonius on the ground that he regularly regards them as precursors of his own theories.

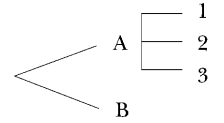
<sup>398</sup> Note how Lucian in his summary of Epicurus' concerns with physical theory at *Par.* 11 (cited in ch. 21) mentions the shape of the earth and the size and distances of the sun, but not its shape.



Epicurean orthodoxy. Indeed it cannot be ruled out that it is in fact an extrapolation on the part of the doxographer.

STRUCTURE (see above sect. 6)

- A definite shape  
 1 flat, like a leaf (= §1)  
 2 bowl-like (= §2)  
 3 ball-like (= §3)  
 B all these shapes possible (= §4)



RECONSTRUCTED TEXT

κβ'. Περὶ σχήματος ἡλίου

- 1 Ἀναξιμένης Ἀλκμαίων πλατὺν ὡς πέταλον τὸν ἥλιον<sup>1</sup>.  
 2 Ἡράκλειτος σκαφοειδῆ<sup>2</sup>, ὑπόκυρτον.  
 3 οἱ Πυθαγόρειοι οἱ Στωικοὶ σφαιροειδῆ, ὡς τὸν κόσμον καὶ τὰ  
 ἄστρα.  
 4 Ἐπίκουρος ἐνδέχεσθαι τὰ προειρημένα πάντα.

1 τὸν ἥλιον om. E

2 φακοειδῆ G

§1a 13A15; §1b 24A4 DK; §2 22A12 DK; §3a–; *SIF* 2.654; §4 fr. 344 Usener

22. On the shape of the sun

- 1 Anaximenes and Alcmaeon (declare that) the sun is flat, like a leaf.  
 2 Heraclitus (declares that it is) bowl-like, somewhat convex.  
 3 The Pythagoreans and the Stoics (declare that it is) ball-like, like the  
 cosmos and the stars.  
 4 Epicurus (declares that) all the above-mentioned (shapes) are possible.

DIALECTICAL-DOXOGRAPHIC PARALLELS

**Aristotle** *Ph.* 2.1 193b29, cited above ch. 20. **Posidonius** *ap.* D.L. 7.144 = F117 E.-K., τὸν μὲν ἥλιον ... ἀλλὰ καὶ σφαιροειδῆ, ὡς οἱ περὶ αὐτὸν τοῦτον (sc. τὸν Ποσειδώνιον) φασιν, ἀναλόγως τῷ κόσμῳ.

Aëtius *Placita* 2.23

Περὶ τροπῶν ἡλίου

WITNESSES

Ps.Plutarch 2.23, *Papyri Antinoopolis* 85 fr. iv, ps.Galen 65  
Stobaeus 1.25.1d, 3acehi

ANALYSIS

1. Our doxographer now moves on to the subject of the sun's motion, which logically follows on from its substance, size and shape. There is, however, no chapter Περὶ κινήσεως, as was the case for the stars (2.16) and probably for the cosmos as whole (2.2a). Instead there is a chapter on the sun's solstices, which in the geocentric hypothesis was the most striking particular feature of the sun's motion. The doxai are not descriptive but focus on the cause (τὸ διὰ τί), i.e. why it moves from solstice to solstice. This chapter is present in both major witnesses PS, but otherwise it is poorly attested. It is missing in EQ, and is not referred to by T. Ach too furnishes no parallel material.<sup>399</sup> This would seem to indicate a lack of interest in its subject-matter, for it is too long to be easily overlooked.

2. The text in P records six doxai as follows:

κγ'. Περὶ τροπῶν ἡλίου

- P2.23.1 Ἀναξίμενης ὑπὸ πεπυκνωμένου ἀέρος καὶ ἀντιτύπου ἐξωθεῖσθαι τὰ ἄστρα.  
P2.23.2 Ἀναξαγόρας ἀνταπώσει τοῦ πρὸς ταῖς ἄρκτοις ἀέρος, ὃν αὐτὸς συνωθῶν ἐκ τῆς πυκνώσεως ἰσχυροποιεῖ.  
P2.23.3 Ἐμπεδοκλῆς ὑπὸ τῆς περιεχούσης αὐτὸν σφαίρας κωλυόμενον ἄχρι παντὸς εὐθυπορεῖν καὶ ὑπὸ τῶν τροπικῶν κύκλων.  
P2.23.4 Διογένης ὑπὸ τοῦ ἀντιπίπτοντος τῇ θερμότητι ψύχους σβέννυσθαι τὸν ἥλιον.  
P2.23.5 οἱ Στωικοὶ κατὰ τὸ διάστημα τῆς ὑποκειμένης τροφῆς διέρχεσθαι τὸν ἥλιον· ὠκεανὸς δ' ἐστὶν ἡ γῆ, ἣς τὴν ἀναθυμίασιν ἐπινέμεται.

<sup>399</sup> The mention of the subject in Philo *Mut.* 67 no doubt goes back to the anterior doxographical tradition (text below). Philo mentions how the sun produces the seasons by its movement, but this he could have easily added himself.

- P2.23.6 Πλάτων Πυθαγόρας Ἀριστοτέλης παρὰ τὴν λόξωσιν τοῦ ζῳδια-  
κου κύκλου, δι' οὗ φέρεται λοξοπορῶν ὁ ἥλιος, καὶ κατὰ δορυ-  
φορίαν τῶν τροπικῶν κύκλων· ταῦτα δὲ πάντα καὶ ἡ σφαῖρα  
δείκνυσιν.

For the tradition of P only G and a papyrus snippet is available for comparative purposes. G includes the first five doxai. Interestingly, he appears to add a personal gloss on the Stoic doxa (627.1–3 Diels):

- G5 οἱ Στωικοὶ κατὰ τὸ διάστημα τῆς ὑποκειμένης τροφῆς διέναι τὸν  
ἥλιον· ὠκεανὸν δὲ καὶ τὴν θάλασσαν παρέχειν τῷ ἥλιῳ τροφήν τὴν  
αὐτοῦ ὑγρότητα ἔχουσαν ἐν αὐτῷ καὶ τὴν γεώδη ἀναθυμίασιν.

The sentence is clumsy, but the point seems to be that the sun receives its nourishment from the two elements water and earth, as is implied in P's doxa as well.<sup>400</sup> But two of P's mss. delete ἡ in the phrase ὠκεανὸς δ' ἐστὶν ἡ γῆ, so the doxa obviously has given rise to difficulties. We return to it below. The 3rd cent. papyrus snippet of P found in 1913 contains less than 20 letters spread out over eight lines, so cannot give us much help. It does show that in this early codex, which has lines of on average five to six words, the doxai were written continuously without any break.<sup>401</sup>

3. For the evidence of S we have to return to the complexities of his ch. 25. The following doxai can be recovered:

- 1.25 title Περί οὐσίας ἡλίου καὶ μεγέθους σχήματός τε καὶ τροπῶν καὶ  
ἐκλείψεως καὶ σημείων καὶ κινήσεως
- 1.25.1d  
S1 Ἀναξιμένης  
—ὕπὸ πεπυκνωμένου δὲ ἀέρος καὶ ἀντιτύπου ἐξωθούμενα τὰ  
ἄστρα τὰς τροπὰς ποιεῖσθαι.
- 1.25.3a  
S2 Ἀναξαγόρας  
—τροπὴν δὲ γίνεσθαι ἀνταπώσει τοῦ πρὸς ταῖς ἄρκτοις ἀέρος,  
ὃν αὐτὸς συνωθῶν ἐκ τῆς πυκνώσεως ἰσχυροποιεῖ.
- 1.25.3c  
S3 Διογένης  
—ὕπὸ δὲ τοῦ ἀντιπίπτοντος τῇ θερμότητι ψυχροῦ σβέννυσθαι.

<sup>400</sup> Diels justifiably writes in his apparatus (*DG* 627) 'sententiam non adsequor'. A possible translation is: '(they say) that the ocean and the sea provide the sun with nourishment that has its moisture in it, and so does the earthy exhalation.' But it is intolerable to retain both αὐτοῦ and ἐν αὐτῷ with reference to the sun.

<sup>401</sup> Edited by Barns in Barns–Zilliacus (1960–1967) 2.75. The supplements are based on Diels. On the papyrus see further Vol. I:126–130.

1.25.3e

S4

Ἐμπεδοκλῆς

—τροπὴν δὲ γίνεσθαι ὑπὸ τῆς περιεχούσης αὐτὸν σφαίρας  
 κωλυόμενον ἄχρι παντὸς εὐθυπορεῖν καὶ ὑπὸ τῶν τροπικῶν  
 κύκλων.

1.25.3h

S5

Δημόκριτος

—τροπὴν δὲ γίνεσθαι ἐκ τῆς περιφερούσης αὐτὸν δινήσεως.

1.25.3i

S6

Κλεάνθης

—περὶ δὲ τῶν τροπῶν φασὶ κατὰ τὸ διάστημα τῆς ὑποκειμένης  
 τροφῆς· ὠκεανὸς δ' ἐστὶ \*\* ἣς τὴν ἀναθυμίασιν ἐπινέμεται.

S7

συγκαταφέρεσθαι δὲ τὸν ἥλιον κινούμενον ἔλκα ἐν τῇ σφαίρᾳ,  
 ἀπὸ τοῦ ἰσημερινοῦ ἐπὶ τε ἄρκτου καὶ νότου, ἅπερ ἐστὶ πέρατα  
 τῆς ἔλκος·

S8

ἄλλοι δὲ ἐπ' εὐθείας αὐτὸν κινεῖσθαι τὴν ἔλκα οὐ περὶ σφαῖραν  
 ποιοῦντα, περὶ δὲ κύλινδρον.

S adds three doxai and diverse complications. The title is neatly absorbed into the comprehensive title at the head of the chapter.<sup>402</sup> In all cases, because of the process of coalescence, the doxai are grouped with others under a single name-label. This induces him to add various phrases in order to clarify the subject (τὰς τροπὰς ποιεῖσθαι in S1,<sup>403</sup> τροπὴν δὲ in S2-4-5, περὶ δὲ τῶν τροπῶν in S6).<sup>404</sup> Three problems arise.

- (1) The doxa attributed to Democritus is new. But because the order becomes jumbled through the process of coalescence, we can only attempt to determine its original place in A's chapter by reconstructing the reasoning behind the chapter's organization.
- (2) The final doxa in P attributed to Plato–Pythagoras–Aristotle is not included. It appears that it has been replaced by the long extract from AD on Aristotle at 1.25.4. This means that two name-labels have disappeared. It is surprising that the doxa did not induce S to quote *Ti.* 40d2 (see n. 413 below).
- (3) The greatest challenge is posed by the final cluster of doxai. S places S6 under the name-label of Cleanthes (from A 2.20.6\*), but from P we know that φασί refers to the Stoics. The final two doxai were omitted by Diels

<sup>402</sup> The mention of ζήνησις in his title is no doubt inspired by the extracts from AD in 1.25.4-5.

<sup>403</sup> S's reading is clearer than that of P because he specifically refers to the theme of the solstices. We retain the latter, because of the likelihood that the process of coalescence has induced S to make the change. But it is also possible that P compressed the text.

<sup>404</sup> In the case of Diogenes the reader could not guess that the doxa concerns the explanation of the solstices.

in his reconstruction and also by Von Arnim in his fragment collection.<sup>405</sup> There are a number of options here:

- (a) The doxa continues the view of the Stoics, as suggested by S's treatment, the ἄλλοι representing a further group either within or outside the school.
- (b) The lemma indicates a general διαφωνία on the sun's motion, possibly placed at the end of the chapter. This means that the doxa's name-label has been left out by S.
- (g) The passage is an extract from AD that has been tacked on to the Aëtian material. The bare verb in the infinitive without a name-label followed by δέ is not untypical of AD's style.<sup>406</sup>
- (d) The passage represents the remnants of a separate chapter in A on the sun's motion, parallel to ¶2a\*.

The final two of these possibilities can be rejected. AD would have to be presenting a radical opposition between members of the Stoic school, but the second alternative, no matter how we understand it, does not cohere with its cosmology. If a separate chapter Περί κινήσεως ἡλίου had existed in A, then it should have preceded the chapter on the solstices. But S records the doxa from that chapter first. In order to decide between the other two possibilities, we will have to gauge the intent of the chapter as a whole.

4. The task of determining the order of the doxai and the structure of the chapter is particularly difficult in this case. Because of the method he has chosen, S has not preserved any of the blocks of doxai that elsewhere are so useful for us, except perhaps in the case of the final three doxai S6-7-8. We are thus left with little more than the evidence of P to help us. In general as epitomator P preserves the order as he finds it, but there are some exceptions.<sup>407</sup> The doxai thus have to be carefully examined.

- (a) The first two doxai P<sub>1-2</sub> (= S<sub>1-2</sub>) clearly belong together, because they both explain the 'turnings' of the sun at the solstices through the opposition of air. As we learn from texts in Aristotle (see further below sect. 6), this is the result of processes that took place as part of the primeval cosmogony.<sup>408</sup> There are two chief differences: the Anaximenean doxa rather surprisingly speaks about τὰ ἄστροα (presumably the planets) and

<sup>405</sup> Diels must have overlooked them and could only print them as an addendum at *DG* 853, but there is no cross-reference on 353, so the passage has been generally neglected. They are of course included by Wachsmuth.

<sup>406</sup> See the observations in *Aëtiana* Vol. I:247.

<sup>407</sup> See the observations in *Aëtiana* Vol. I:193, and the example in the analysis in ch. 13 sect. 6.

<sup>408</sup> For further discussion see Wöhrle (1993) 76.

not the sun only as in the Anaxagorean view (rather obliquely through the word αὐτός; in both cases the air thickens and causes resistance, but Anaxagoras specifies the role of the wind in the north). The doxai may seem more or less complementary and their formulation of the doxai does not emphasize the opposition. Nevertheless the doxographer would not have included them both if they were identical.<sup>409</sup>

- (b) The next doxa in P is that of Empedocles (= S<sub>4</sub>). We suggest, however, that before it the roving Democritean lemma (= S<sub>5</sub>) should be placed. Democritus' explanation in terms of the cosmic whirl follows on well from the first two doxai, which both assume a flat earth. The Empedoclean view can be placed next. Both Democritus and Empedocles explain the solstices in relation to the motion of the heavens, the latter's explanation of the constraint of the sphere and solstitial circles showing more sophistication than the simple invocation of the δίνης. Again there is a group of two.
- (c) The doxa attributed to Diogenes is more difficult. It would have been natural to group his view with those of Anaximenes and Anaxagoras, since Diogenes' affinity to their cosmology is well known. Our doxographer chooses not to do this, omitting all reference to the role of air. Moreover the verb σβέννυσθαι might seem inappropriate for the subject under discussion. Diels *DG* 62 argued that it belonged to the next chapter on eclipses, where it should have followed the doxa of Xenophanes. He attributed the mistake to P (S cannot help us out). The verb need not, however, indicate complete extinction of the fire. As it approaches the winter solstice the sun loses its force.<sup>410</sup>
- (d) If this is correct, it is likely that A saw a parallel between Diogenes' view and that of the Stoa (= P<sub>5</sub>, S<sub>6</sub>). Both involve a cyclical process in which the gradual change in circumstances forces the sun to alter the direction of its movement. In the case of the Stoics it is the lack of sustenance in the areas outside the tropics,<sup>411</sup> for Diogenes the increasing cold. The parallel is closer if we assume that Diogenes too is thinking of the process of sustenance through evaporation.<sup>412</sup> The theme of nourishment (cf. the parallel for the cosmos as a whole in ¶5) thus interacts with that of motion. So here again two doxai appear to be linked together.
- (e) The final doxa in P is attributed to the weighty triple name-label of Plato–Pythagoras–Aristotle. As in 2.10.1\*, where the same three names

<sup>409</sup> Wöhrle (1993) 76 overlooks this when he suggests: 'ἀστὴρ kann an dieser Stelle totum pro parte (Sonne) sein'.

<sup>410</sup> Cf. Laks (1983) 194. Cf. the delightful expression used by Plutarch of Metellus Pius, τὸ μάχμιον καὶ θαρσαλέον ἤδη σβεννύμενον ὑπὸ γήρως (*Pomp.* 8.6, cited by LSJ s.v.).

<sup>411</sup> This is probably a Cleanthean and not a general Stoic view; cf. Kidd on Posidonius fr. F118B E.-K.. Here it is attributed to the Stoics in general.

<sup>412</sup> Cf. Laks (1983) 194 and the texts at Kirk-Raven-Schofield (1983) 446.

occur,<sup>413</sup> it represents the conventional view of the dominant scientific model as it developed from the 4th cent. BCE onwards. λόξωσις and λοξοπορῶν are technical terms in this model (oddly the former is first found in Epicurus at D.L. 10.93). The image of the tropics as watchmen is also derived from technical astronomical and astrological literature.<sup>414</sup> In P the doxa stands alone at the end. But we should note that in its formulation it does have features which link it to the Empedoclean view, i.e. the role of the sphere and of the tropics (ὑπὸ τῶν τροπικῶν κύκλων in both doxai). We return to this feature below in sect. 6.

- (f) Finally we return to the two doxai S7–8 at the end of S's excerpts. They are plainly formulated to stand in opposition to each other. The former appears to assume the dominant geocentric spherical model of the universe which also forms the basis for the Platonic–Pythagorean–Aristotelian doxa P6. The helix is formed by the progression of the sun between the two tropics combined with its movement together with the cosmos as a whole (cf. *Ti.* 39a6). In the latter the spiral would appear to be caused by the cosmic whirl which somehow enables the sun to move higher and lower, as along the side of a cylinder. When the spiral reaches the intersection of the cylinder with the hemisphere of the heaven at the tropics, it is forced to a halt, not being able to continue its straight movement (cf. εὐθυπορεῖν in the doxa of Empedocles). Elsewhere cylindrical shape is attributed to the earth (Anaximander's stone pillar, P 3.10.2) and even (by crude analogy) to the moon (anonymously at A 2.27.4\*). In broadest terms the doxai thus illustrate the contrast between a (mechanical) vortex model (note that the vortex is explicitly attributed to Democritus earlier in the chapter) and a (teleological) centrifocal model. But this understanding of the διαίρεσις is possibly more sophisticated than the text warrants. Certainly it is not possible to understand the entire chapter in terms of this opposition.

There remains the question of the attribution of the doxa. As it stands in S, S7 appears to continue the views of the Stoics. This, we believe, should be accepted. The Stoics appear to have a privileged position in relation to questions involving the spherical shape of both the cosmos and its parts: cf. 2.2.1\*, 2.6.1\*, 2.14.1\*, 2.22.3\*, 2.27.1. But it would be rash to assume that the name-label was repeated in A, given that the use of the same name-label in successive doxai does not appear to occur in the

<sup>413</sup> Also at P 4.20.1, 5.4.2. In all three other texts the order is chronological, i.e. Pythagoras, Plato, Aristotle. The word order here perhaps indicates that the *Timaeus* is the chief source (the σφαῖρα is mentioned by implication at 40d2). On Pythagoras in the *Placita* see also our comments at ch. 12 sect. 7.

<sup>414</sup> See now Denningmann (2005), but this passage is not discussed. The idea seems to be that just as the Great King is flanked by his spearmen or bodyguards, so the sun moves between the limits of the tropics and is as it were enclosed by them; cf. the enclosing of planets by each other mentioned by S.E. *Adv. math.* 5.31 and discussed by Denningmann (2005) 192.

*Placita*.<sup>415</sup> S7 could be seen as simply a continuation of S6, but because S8 forms a deliberate contrast, we prefer to regard it as a separate lemma.

5. It is time to look at the chapter as a whole. A first observation is that all the doxai in P and the additional Democritean doxa in S are formulated by means of prepositional phrases which answer the question ‘why (διὰ τί) does the sun move between the tropics?’ In fact originally the title of the chapter may have been something like διὰ τί ὁ ἥλιος τὰς τροπὰς ποιεῖται (cf. S1). The three groups of paired doxai analysed above appear to form the following diaeresis:

- |   |   |
|---|---|
| A | two explanations attributed to Anaximenes and Anaxagoras involving resistance of thickened air (οὐσία); |
| B | two explanations attributed to Democritus and Empedocles involving cosmic movement (κίνησις);           |
| C | two explanations attributed to Diogenes and the Stoa involving solar sustenance (τροφή).                |

The final Platonic–Pythagorean–Aristotelian doxa appears to fall outside this diaeresis. But we recall that its phrasing seemed to contrast it with the earlier doxa of Empedocles. Moreover its explanation is also primarily in terms of cosmic motion. It would seem to make sense, then, to juxtapose these doxai in the chapter itself, i.e. place the view of Plato–Pythagoras–Aristotle directly after the Empedoclean view. The consequence is that for once we have to abandon P’s order, in the assumption that in this case he wished to retain the standard scientific view till the end. This enables us to detect a progression in the views of Democritus, Empedocles, Plato–Pythagoras–Aristotle, the views of the vortex model and the spherical model being mediated by a doxa involving both a sphere and (by implication) the circular motion of the whirl. Again the doxographer’s fondness for associative concatenation is apparent: ἐκ τῆς περιφερούσης αὐτὸν διήσεως is picked up by ὑπὸ τῆς περιεχούσης αὐτὸν σφαίρας, while ὑπὸ τῶν τροπικῶν κύκλων is linked with κατὰ δορυφορίαν τῶν τροπικῶν κύκλων. The final two doxai do not extend the diaeresis, but, as noted above, they amount to a kind of rehash of the contrast between Empedocles and Plato–Pythagoras–Aristotle in terms of a vortex and a centrifocal model. These final doxai add little to the chapter. As noted above in sect. 3, they may have been tacked on.

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<sup>415</sup> The examples in Diels are due to his reconstruction, but do not occur in the sources: cf. 1.29.2–3, 5–6, 4.8.8–9, 4.10.4–5 Diels.



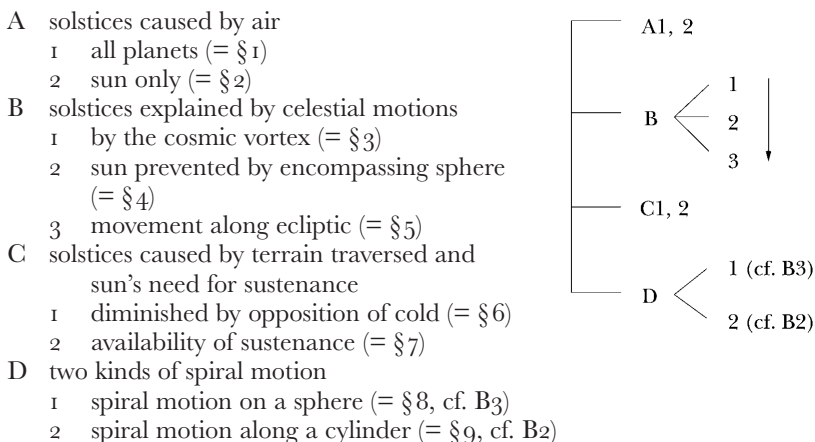
The structure of the chapter can thus be reconstructed as follows. There is a list of four small groups of doxai forming a type C diaeresis. The first three each present different explanations, involving air, celestial motions and sustenance respectively. The fourth adds an opposition involving two kinds of spiral motion which is a partial reprise of the second group (we cannot be certain that these lemmata belonged to the original chapter). If there are nine doxai, then the standard view of Plato–Pythagoras–Aristotle occupies the position right in the middle, which may be not entirely coincidental.

6. The subject is mentioned in some early texts. In his account of Socrates' perplexities in the area of physics in the *Phaedo*, Plato refers to the question of the sun's solstices. A remnant of the Presocratic discussion is found in Aristotle's chapters on the sea (*Mete.* 2.1–2). At 353b6–10 the views of Anaximenes and Anaxagoras can be recognized (cf. also 355a21–26), at 354b34 there is an argument against a predecessor of the Stoic view (perhaps Heraclitus).<sup>416</sup> But on the whole the question was not controversial in post-Aristotelian times, the explanation of the tilt of the zodiacal circle being generally accepted. Once again the great exception is Epicurus. In a passage in his letter to Pythocles he gives four possible explanations of the τροπαί of the sun (and also the moon), all of which can be located in A's chapter: (1) tilting, i.e. Plato–Pythagoras–Aristotle; (2) resistance of air, i.e. Anaxagoras; (3) presence or absence of combustible material, cf. the Stoa; (4) vortex, i.e. Democritus (and for the helical movement see the final anonymous view). We can see how for this chapter too A could have easily added a final doxa Ἐπίκουρος οὐδὲν ἀπογινώσκει τούτων, ἐχόμενος τοῦ ἐνδεχομένου (cf. the formulation at 2.13.16\*). It is inconceivable that A and the Epicurean account are entirely independent of each other.<sup>417</sup> We also note various tell-tale similarities in vocabulary such as κατὰ λόξωσιν, ἀντέξωσιν, δίνην, ἔλικα.

<sup>416</sup> Cf. Hahm (1977) 152 and n. 39–40.

<sup>417</sup> See Mansfeld (1994) on Epicurus' relation to the Peripatos, but his use of the *Placita* is yet to be thoroughly researched.

## STRUCTURE (see above sect. 5)



## RECONSTRUCTED TEXT

κγ'. Περί τροπῶν ἡλίου

- 1 Ἀναξιμένης ὑπὸ πεπυκνωμένου ἀέρος καὶ ἀντιτύπου ἐξωθεῖσθαι τὰ ἄστρα<sup>1</sup>.
- 2 Ἀναξαγόρας ἀνταπώσσει τοῦ πρὸς ταῖς ἄρκτοις ἀέρος, ὃν αὐτὸς συνωθῶν ἐκ τῆς πυκνώσεως ἰσχυροποιεῖ.
- 3 Δημόκριτος ἐκ τῆς περιφερούσης αὐτὸν δινήσεως.
- 4 Ἐμπεδοκλῆς ὑπὸ τῆς περιεχούσης αὐτὸν σφαίρας κωλύμενον ἄχρει παντὸς εὐθυπορεῖν καὶ ὑπὸ τῶν τροπικῶν κύκλων.
- 5 Πλάτων Πυθαγόρας Ἀριστοτέλης παρὰ<sup>2</sup> τὴν λόξωσιν τοῦ ζωδιακοῦ κύκλου, δι' οὗ φέρεται λοξοπορῶν ὁ ἥλιος, καὶ κατὰ δορυφορίαν τῶν τροπικῶν κύκλων· ταῦτα δὲ πάντα καὶ ἡ σφαῖρα δείκνυσιν.
- 6 Διογένης ὑπὸ τοῦ ἀντιπίπτοντος τῇ θερμότητι ψύχους σβέννυσθαι τὸν ἥλιον.
- 7 οἱ Στωικοὶ κατὰ τὸ διάστημα τῆς ὑποκειμένης τροφῆς διέρχεσθαι τὸν ἥλιον· ὠκεανὸς δ' ἐστὶν ἡ γῆ<sup>3</sup>, ἥς τὴν ἀναθυμίασιν ἐπινέμεται·
- 8 συγκαταφέρεσθαι δὲ τὸν ἥλιον κινούμενον ἑλικά ἐν τῇ σφαίρᾳ, ἀπὸ τοῦ ἰσημερινοῦ ἐπὶ τε ἄρκτου καὶ νότου, ἅπερ ἐστὶ πέρατα τῆς ἑλίκης·
- 9 ἄλλοι δὲ ἐπ' εὐθείας αὐτὸν κινεῖσθαι τὴν ἑλικά οὐ περὶ σφαῖραν ποιοῦντα, περὶ δὲ κύλινδρον.

- 
- 1 PG, ἐξωθούμενα ... τὰς τροπὰς ποιέσθαι S  
 2 περί P<sup>2</sup>  
 3 ἢ γῆ P (ἢ om. P<sup>2</sup>), ὠκεανὸς δ' ἐστὶν ἥς S, quod lacunam indicat; καὶ ἡ μεγάλη  
 θάλασσα conj. Wachsmuth (cf. paraphrasin G)
- 

§1 13A15 DK; §2 59A72 DK; §3 68A89 DK; §4 31A58 DK; §5a–; §5b–; §5c T19  
 Gigon; §6 64A13 DK; §7 *SVF* 1.508, 2.658; §8–; §9—

### 23. On the turnings of the sun

- 1 Anaximenes (declares that) the heavenly bodies are pushed off course by condensed and resistant air.
- 2 Anaxagoras (declares that the solstices are caused) by the repulsion of the northern air, which it (the sun) by pushing makes strong as the result of the condensation (that occurs).
- 3 Democritus (declares that they are caused) as the result of the whirling that carries it (the sun) around.
- 4 Empedocles (declares that they are caused) by the sphere that surrounds it (the sun) and prevents it from continuing its course in a straight line, and by the solstitial circles.
- 5 Plato, Pythagoras and Aristotle (declare that they result) from the tilting of the zodiac circle, through which the sun moves with in an oblique course, and in virtue of the flanking of the solstitial circles. All these matters the sphere demonstrates as well.
- 6 Diogenes (declares that) the sun is quenched by the cold that collides with the heat.
- 7 The Stoics (declare that) the sun's course is determined by the distance covered in accordance with the food available to it. This is the ocean or the earth, from which it consumes the exhalation.
- 8 And the sun as it moves produces a concomitant spiral on the sphere, from the equinoctial (circle) to both the northern and the southern (tropic), which are the limits of the spiral.
- 9 But others (say) that its movement makes a spiral in a straight line by doing this not around a sphere, but around a cylinder.

### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Plato** *Phd.* 98a (of Socrates), καὶ δὴ καὶ περὶ ἡλίου οὕτω παρεσκευάσμην ὥσαύτως πεισόμενος, καὶ σελήνης καὶ τῶν ἄλλων ἄστρον τάχους τε πέρι πρὸς ἄλληλα καὶ τροπῶν καὶ τῶν ἄλλων παθημάτων, πῇ ποτε ταῦτ' ἀμεινόν ἐστιν ἕκαστον καὶ ποιεῖν καὶ πάσχειν ἃ πάσχει. **Aristotle** *Mete.* 2.2 353b6, οἱ δὲ σοφώτεροι τὴν ἀνθρωπίνην σοφίαν ποιοῦσιν αὐτῆς (sc. τῆς θαλάττης) γένεσιν· εἶναι γὰρ τὸ πρῶτον ὑγρὸν ἅπαντα τὸν περὶ τὴν γῆν τόπον, ὑπὸ δὲ τοῦ ἡλίου ξηραίνόμενον τὸ μὲν διατμίσαν πνεύματα καὶ τροπὰς ἡλίου καὶ σελήνης φασι ποιεῖν; 354b34, διὸ καὶ γελοῖοι πάντες ὅσοι τῶν πρότερον ὑπέλαβον τὸν ἥλιον τρέφεσθαι τῷ ὑγρῷ· καὶ διὰ τοῦτ' ἐνιοὶ γέ φασιν καὶ ποιέσθαι τὰς τροπὰς αὐτόν; 355a21, καὶ

δ' αὐτὸ συμβαίνει καὶ τούτοις ἄλογον καὶ τοῖς φάσκουσι τὸ πρῶτον ὑγρᾶς οὐ-  
σης καὶ τῆς γῆς, καὶ τοῦ κόσμου τοῦ περὶ τὴν γῆν ὑπὸ τοῦ ἡλίου θερμαινομένου,  
ἀέρα γενέσθαι καὶ τὸν ὅλον οὐρανὸν αὐξηθῆναι, καὶ τοῦτον πνεύματά τε παρέ-  
χεσθαι καὶ τὰς τροπὰς αὐτοῦ ποιεῖν. **Epicurus** *ap.* D.L. 10.93, τροπὰς ἡλίου  
καὶ σελήνης ἐνδέχεται μὲν γίνεσθαι κατὰ λόξωσιν οὐρανοῦ οὕτω τοῖς χρόνοις  
κατηναγκασμένου· ὁμοίως δὲ καὶ κατὰ ἀέρος ἀντέξωσιν ἢ καὶ ὕλης αἰεὶ ἐπιτηδεί-  
ας ἔχομένως ἐμπιπραμένης τῆς δ' ἐκλείπουσιν· ἢ καὶ ἐξ ἀρχῆς τοιαύτην δίνην  
κατεῖληθῆναι τοῖς ἄστροις τούτοις, ὥσθ' οἷόν τιν' ἔλικά κινεῖσθαι. πάντα γὰρ  
τὰ τοιαῦτα καὶ τὰ τούτοις συγγενῇ οὐθενὶ τῶν ἐναργημάτων διαφωνεῖ, ἐάν τις  
αἰεὶ ἐπὶ τῶν τοιούτων μερῶν, ἐχόμενος τοῦ δυνατοῦ, εἰς τὸ σύμφωνον τοῖς φαι-  
νομένοις ἕκαστον τούτων δύνηται ἐπάγειν, μὴ φοβούμενος τὰς ἀνδραποδώδεις  
ἀστρολόγων τεχνιτείας. Cf. **Lucretius** 5.614–649. **Philo** *Mut.* 67 (continuation  
of text cited in ch. 21), ἐρευνῶντα τί ἡλίου μέγεθος, τίνες αὐτοῦ φοραί, πῶς τὰς  
ἐτησίους ὥρας διανέμει προσιῶν καὶ ἐξαναχωρῶν πάλιν ἰσοταχέσι ταῖς ἀνακυ-  
κλήσεσι ... **Seneca** *Nat.* 2.1.1, quemadmodum ... (caelum) solem retro flectat  
(full text above in ch. 11). **Hero mechanicus** *Def.* 11, τίς τί εὗρεν ἐν μαθηματι-  
κοῖς; Εὐδημος ἱστορεῖ ἐν ταῖς Ἀστρολογίαις, ὅτι Οἰνοπίδης εὗρε πρῶτος τὴν τοῦ  
ζωδιακοῦ διάξωσιν καὶ τὴν τοῦ μεγάλου ἐνιαυτοῦ περίστασιν, Θαλῆς δὲ ἡλίου  
ἐκλείψιν καὶ τὴν κατὰ τροπὰς αὐτοῦ πάροδον, ὥς οὐκ ἴση αἰεὶ συμβαίνει ... (= **Theon Smyrnaeus** *Expos.* 198.14–18). **Alexander of Aphrodisias** in *Mete.*  
67.3–12, 72.31 Hayduck. **Eusebius** *PE* 10.14.10, τούτων δὴ τῶν ἐπὶ Θαλῆς  
ὁ Μιλήσιος φυσικὸς πρῶτος Ἑλλήνων γεγονώς περὶ τροπῶν ἡλίου καὶ ἐκλείψε-  
ως καὶ φωτισμῶν σελήνης καὶ ἰσημερίας διελέχθη· ἐγένετο δ' ὁ ἀνὴρ ἐπισημότα-  
τος ἐν τοῖς Ἑλλήσι. **Adamantius** *De recta in Deum fide* 164.23 Van de Sande  
Bakhuyzen, καὶ ἐὰν [τε] περὶ ἡλίου τὸν λόγον ποιεῖσθαι θέλης, ἐκτελεῖ οὗτος τὴν  
ὠρισμένην κίνησιν οὐ παραιτούμενος τὸν δρόμον, ἀλλ' ἀνάγκη τινὶ δουλεύων τῷ  
δεσπότη. **Ambrose** *De exc. frat.* 2.86, de solis cursu caelique ratione philosophi  
disputant et sunt qui putant his esse credendum, cum quid loquantur ignorant.

Aëtius *Placita* 2.24  
Περὶ ἐκλείψεως ἡλίου

WITNESSES

Ps.Plutarch 2.24, Eusebius 15.50, ps.Galen 66, Qustā Ibn Lūqā 2.24  
*Scholia Platonica* ad R. 498a  
Stobaeus 1.25.1acgi, 3bek  
Cf. Achilles 19

ANALYSIS

1. The final of the five chapters on the sun turns to the particular question of its eclipse. Like the previous chapter, it is a very clear example of a question διὰ τί, i.e. seeking the αἴτιον. In his *APo.* 2.1 89b26 Aristotle explicitly gives this question as an example of how after we ask τὸ ὅτι (i.e. whether there is an eclipse or not), we then proceed to ask τὸ διότι (text below). The chapter title in A is, however, of the standard περί type.

2. The text in P contains no less than 7 doxai:

κδ'. Περὶ ἐκλείψεως ἡλίου

- P2.24.1 Θαλῆς πρῶτος ἔφη ἐκλείπειν τὸν ἥλιον τῆς σελήνης αὐτὸν ὑποτρεχούσης κατὰ κάθετον, οὔσης φύσει γεώδους· βλέπεσθαι δὲ τοῦτο κατοπτρικῶς ὑποτιθεμένῳ τῷ δίσκῳ.
- P2.24.2 Ἀναξίμανδρος τοῦ στομίου τῆς τοῦ πυρὸς διεκπνοῆς ἀποκλειομένου.
- P2.24.3 Ἡράκλειτος κατὰ τὴν τοῦ σκαφοειδοῦς στροφὴν, ὥστε τὸ μὲν κοῖλον ἄνω γίνεσθαι τὸ δὲ κυρτὸν κάτω πρὸς τὴν ἡμετέραν ὄψιν.
- P2.24.4 Ξενοφάνης κατὰ σβέσιν· ἕτερον δὲ πάλιν πρὸς ταῖς ἀνατολαῖς γίνεσθαι· παριστόρηκε δὲ καὶ ἐκλειπὴν ἡλίου ἐφ' ὅλον μῆνα καὶ πάλιν ἐκλειπὴν ἐντελῇ, ὥστε τὴν ἡμέραν νύκτα φανῆναι.
- P2.24.5 ἔνιοι πύκνωμα τῶν ἀοράτως ἐπερχομένων τῷ δίσκῳ νεφῶν.
- P2.24.6 Ἀρίσταρχος τὸν ἥλιον ἴσῃσι μετὰ τῶν ἀπλανῶν, τὴν δὲ γῆν κινεῖ περὶ τὸν ἡλιακὸν κύκλον καὶ κατὰ τὰς ταύτης ἐγκλίσεις σκιάζεσθαι τὸν δίσκον.
- P2.24.7 Ξενοφάνης πολλοὺς εἶναι ἡλίους καὶ σελήνας κατὰ κλίμα τῆς γῆς καὶ ἀποτομάς καὶ ζώνας· κατὰ τινα δὲ καιρὸν ἐμπίπτειν τὸν δίσκον εἰς τινα ἀποτομὴν τῆς γῆς οὐκ οἰκουμένην ὑφ' ἡμῶν, καὶ οὕτως ὥσπερ κενεμβατοῦντα ἐκλειπὴν ὑποφαίνειν. ὁ δ' αὐτὸς

τὸν ἥλιον εἰς ἄπειρον μὲν προιέναι, δοκεῖν δὲ κυκλεῖσθαι διὰ τὴν ἀπόστασιν.

There are again no variations in the title. The text of the doxai is well preserved in E, with just a few variants (σελήνην instead of γῆν in P6 is probably a *Verschlimmbesserung*). Q leaves out a number of phrases. He supports ES and some mss. of P in reading ὑπομένειν rather than ὑποφαίνειν in P7. G reduces the chapter to four doxai only. He supports E in reading ὑπερχομένης against ὑποτρεχούσης in both P and S (Q cannot help us here). Two doxai, P<sub>3</sub> and P<sub>4</sub>, are preserved in the *Scholia Platonica*, but yield no material of any interest.<sup>418</sup>

3. For S we return for the final time to the complexities of his ch. 25:

- 1.25 title    Περὶ οὐσίας ἡλίου καὶ μεγέθους σχήματός τε καὶ τροπῶν καὶ ἐκλείψεως καὶ σημείων καὶ κινήσεως
- 1.25.1a  
S1    Ξενοφάνης  
—ἐκλείπιν δὲ γίνεσθαι κατὰ σβέσιν· ἕτερον δὲ πάλιν ταῖς ἀνατολαῖς γίνεσθαι. παριστόρηκε δὲ καὶ ἔκλειπιν ἡλίου ἐφ’ ὅλον μῆνα καὶ πάλιν ἐντελῇ, ὥστε τὴν ἡμέραν νύκτα φανῆναι.
- 1.25.1c  
S2    Ἀναξίμανδρος  
—γίνεσθαι δὲ τὴν ἔκλειπιν τοῦ στομίου τῆς τοῦ πυρὸς ἐκπνοῆς ἀποκλειομένου.
- 1.25.1g  
S3    Ἡράκλειτος (καὶ Ἐκταῖος)  
—γίνεσθαι δὲ τὴν ἔκλειπιν κατὰ τὴν τοῦ σκαφοειδοῦς στροφὴν, ὥστε τὸ μὲν κοῦλον ἄνω γίνεσθαι, τὸ δὲ κυρτὸν κάτω πρὸς τὴν ἡμετέραν ὄψιν.
- 1.25.1i  
S4    οἱ Πυθαγόρειοι  
—ἐκλείπιν δὲ γίνεσθαι σελήνης αὐτὸν ὑπερχομένης.
- 1.25.3b  
S5    Θαλῆς  
—ἐκλείπειν δὲ αὐτὸν τῆς σελήνης ὑπερχομένης κατὰ κάθετον, οὐσης φύσεως γεώδους· βλέπεσθαι δὲ τοῦτο κατοπτρικῶς ὑποτιθέμενον τῷ δίσκῳ.
- 1.25.3e  
S6    Ἐμπεδοκλῆς  
—ἐκλείπιν δὲ γίνεσθαι σελήνης αὐτὸν ὑπερχομένης.

<sup>418</sup> Diels had already included them in his apparatus; cf. also above on ¶22. Text at Greene (1938) 241, also included as T1181 in Mouraviev (1999–2003) 4.877. The rendering of P<sub>3</sub> stays quite close to the original, that of P<sub>4</sub> is more of a paraphrase.

1.25.3k

- S7 Ἀρίσταρχος τὸν ἥλιον ἴσῃσι μετὰ τῶν ἀπλανῶν, τὴν δὲ γῆν  
κινεῖσθαι περὶ τὸν ἥλιακὸν κύκλον καὶ κατὰ τὰς ταύτης ἐγκλίσεις  
σκιάζεσθαι.
- S8 Ξενοφάνης πολλοὺς εἶναι ἡλίους καὶ σελήνας κατὰ τὰ κλίματα τῆς  
γῆς καὶ ἀποτομὰς καὶ ζώνας. κατὰ δὲ τινὰ καιρὸν ἐκπίπτει τὸν  
δίσκον εἰς τινὰ ἀποτομὴν τῆς γῆς οὐκ οἰκουμένην ὑφ' ἡμῶν καὶ  
οὕτως ὥσπερ εἰ κενεμβατοῦντα ἐκλείψιν ὑποφαίνειν· ὁ δ' αὐτὸς  
τὸν ἥλιον εἰς ἄπειρον μὲν προΐέναι, δοκεῖν δὲ κυκλεῖσθαι διὰ τὴν  
ἀπόστασιν.

All of P's doxai can be recovered amidst the coalesced clusters, with the exception of the anonymous doxa P<sub>5</sub>, which S either overlooked or considered not worth incorporating. A number of observations can be made.

- (1) The phrases ἐκλείψιν δὲ γίνεσθαι vel sim. are obviously added by S to facilitate the process of coalescence.
- (2) He overlooks the possibility of adding the second Xenophanean doxa S<sub>8</sub> to the first S<sub>1</sub>, and so has to record it at the end. After these two doxai S<sub>7</sub>–8 S moves on to texts from Arius Didymus. We can be fairly certain that they brought up the rear in A's original chapter, as suggested by P. Apart from this observation, however, S cannot help us with the question of the order of the doxai in A.
- (3) On the double name-label in 1g (= S<sub>3</sub>) see above ch. 21 sect. 3.
- (4) The two additional doxai are S<sub>4</sub> on the Pythagoreans and S<sub>6</sub> on Empedocles. Both have a textually identical formulation, which moreover contains a phrase very similar to what is found in S<sub>5</sub>, which in P is the opening doxa and represents the majority point of view from the viewpoint of ancient cosmology. However, we cannot simply add the two name-labels to S<sub>5</sub>, because it is formulated in terms of the *πρῶτος εὐρέτης* motif. Fortunately the subsequent chapter on the moon's illuminations (§28) provides a perfect analogy (doxa only at S 1.26.2): *Θαλῆς πρῶτος ἔφη ... Πυθαγόρας Παρμενίδης Ἐμπεδοκλῆς Ἀναξαγόρας Μητροδόωρος ὁμοίως*. We take over this formula in our reconstruction.
- (5) Some of the textual variants recorded by S have already been noted above. He omits the final two words in the Aristarchan doxa, and in a note in his apparatus Mau states that it is his preferred reading. He is right to retain it in P, however, because it is the *difficilior lectio*, and we shall do the same in our reconstructed text of A.

4. This chapter too was skipped by T. There is some additional evidence in ch. 19 on the sun in Ach, but it is amounts to little:

*Isagoge* 19, 46.32–47.3 Maass ~ 28.1–3 Di Maria

- Ach1 ἐκλείπει δέ, ὥς μὲν τινὲς φασιν, ἔμπροσθεν αὐτοῦ τῆς σελήνης  
κατὰ κάθετον αὐτοῦ γιγνομένης, ὃ καὶ μᾶλλον πιθανόν·

προσγειότερα γὰρ αὐτοῦ ἐστὶν ἢ σελήνη καὶ κατωτέρα τοῦ ἡλίου·  
οὕτω γὰρ καὶ ὁ Ἄρατος ...

The words ἔμπροσθεν αὐτοῦ τῆς σελήνης κατὰ κάθετον αὐτοῦ γιγνομένης are somewhat reminiscent of the doxa of Thales, esp. the fairly common phrase κατὰ κάθετον.<sup>419</sup> But the passage is not couched in the typical style of the *Placita*. We note especially how it starts with the verb and has the reference to proponents in parentheses. Moreover the evaluative comment followed by evidence in favour of the view differs from the rationale in Book II that A follows.<sup>420</sup>

5. On the basis of our evidence, therefore, there are eight doxai, which are in this case not heavily structured (it is quite unusual that no oppositions are emphasized at all), but can be seen as forming a number of groups. As in ch. 1 A starts with the πρῶτος εὐρετῆς motif,<sup>421</sup> but here he combines it with the doxa itself (cf. A at P 4.2.1): it happens to be the dominant scientific view. This is not something that the doxographer tells us, but the addition of two extra name-labels to the venerable Thales as discoverer in the next lemma perhaps gives it additional weight. The final comment, which is textually difficult,<sup>422</sup> adds a pedagogic comment, similar to the remark about the globe in the previous chapter. The following four views are placed side by side in a type C diaeresis. In the case of Anaximander there is an evident relation to his view on the sun's οὐσία, in the case of Heraclitus to his view on the sun's shape. The rationale for the order Anaximander–Heraclitus–Xenophanes–anonymi seems for the most part arbitrary. The anonymous doxa, involving interposition, is rather similar to the standard view. It is placed fourth, however, either because it is anonymous or because it refers to clouds (water), whereas the previous three invoked the sun's fiery nature. The sixth doxa attributed to Aristarchus differs

<sup>419</sup> Ach's formulation is closer to the report of Aristarchus on Thales found in *POxy* 3710 (= *CPF* I, Thales 37) than to A: ὅτι ἐν νομηγία αἱ ἐκλείψεις δηλο[ῖ] Ἀριστάρχος ὁ Σάμ[ι]ος γράφων· ἔφη τε ὁ μὲν Θαλῆς ὅτι ἐκλείπειν τὸν ἡλ[ί]ον σελήνης ἐπίπροσθεν αὐτῷ γενομένης, σημειούμενος τοῦτο ἀπὸ τῆς ἡμέρας ἐν ᾗ ποιεῖται τὴν ἐκλείφιν ... (accepting the conjecture of Lebedev (1990) 77). The papyrus is from a 2nd cent. CE commentary on Homer's *Odyssey*.

<sup>420</sup> On the rare evaluative comments in A see Mansfeld (1992a) 109–111; they are mainly confined to Book I.

<sup>421</sup> On this motif see above ch. 1 n. 64 on 2.1.1\*.

<sup>422</sup> See the comments at Diels *DG* 53, Torracca (1961) 452. In our view Mau was right not to obelize P's text, since with the help of the parallels at Plato *Phd.* 99d, D.L. 7.146 and Seneca *Nat.* 1.12.1 a reasonable interpretation can be given.



sharply in that it presupposes the heliocentric hypothesis. It thus stands in contrast to all the other views. A difficulty in this doxa is that the inclination of earth seems to be quite irrelevant to the explanation of an eclipse. The doxa has very likely been misplaced.<sup>423</sup> As in the case of the final two lemmata of 2.23\*, it would fit better in a general chapter *περὶ κινήσεως ἡλίου*.<sup>424</sup> Aristarchus is mentioned only here in the cosmological part of A.<sup>425</sup> The final lemma returns to the views of Xenophanes, this report being even odder than the earlier one. The final part beginning with *ὁ δ' αὐτός* would also find a more suitable place in a chapter on motion. It is located at the end either because it is an unusual view (as often in A), or because it involves multiple suns (cf. 2.20.15\*), or because both suns and moons are mentioned (cf. the final placement of the Heraclitean doxa at A 2.28.6\*). It should be noted, however, that its view does contribute a different element to the chapter because it explains the sun's eclipse through its disappearing descent, and not through any kind of mechanical motion or external interposition.<sup>426</sup>

6. As in the previous chapter the only really interesting parallels are found in the Epicurean tradition (elsewhere the majority view being completely dominant). In *Ep. Pyth.* 10.96 Epicurus again allows for a plurality of reasons (text below; see also ch. 29 sect. 6). The text is sloppily written and combines the explanations for both sun and moon, but the view of Xenophanes is easily recognized. The anonymous view in the sixth doxa is perhaps also alluded to, especially if we accept Usener's conjecture *ἀοράτου* instead of *οὐρανοῦ ἤ*.<sup>427</sup> The majority view is not mentioned as such, but the scholion that has found its way into the text does refer to it. Another report in Servius also gives

<sup>423</sup> Heath (1913) 305 speculates that the lemma originally gave an explanation of the phenomena of the seasons, but was misapplied to the question of eclipses, resulting in the addition of the words *τὸν δίσκον* at the end.

<sup>424</sup> Another possibility would be in ¶16 *Περὶ τάξεως ἀστέρων*, as suggested by Lachenaud *ad loc.*

<sup>425</sup> Elsewhere only twice in the chapter on colours (= P 1.15) and also on sight in 4.13 (if Diels' emendation is accepted, cf. *DG* 853), each time only in S. But we do not know what P may have left out in 3.11!

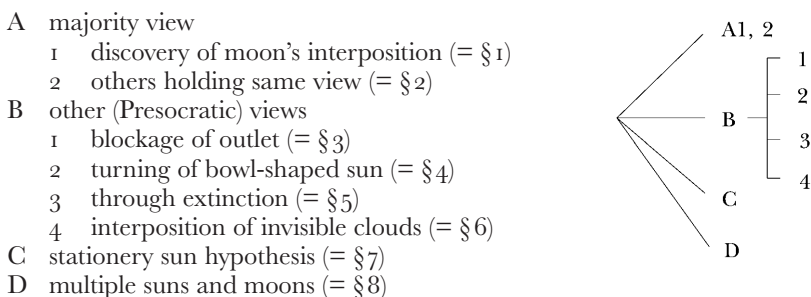
<sup>426</sup> It should be recalled that *ἐκλείπειν* literally means 'to be absent' or 'to fail'. In the final lemma one would be justified in translating *ἐκλείψιν ὑποφαίνειν* as 'appears to be absent'. See also our comments below at ch. 29 sect. 1.

<sup>427</sup> Usener argues strongly for the conjecture in his Preface, (1887) xviii, but does not include it in his text. Invisible bodies are also mentioned in the doxa of Anaximenes at 2.13.10\*.

multiple views, two of which are the same as in A (but *ut longius recedat* recalls κατ' ἀναχώρησιν in the scholion). As in the previous chapter, the *Placita* do not explicitly call attention to the Epicurean modal view. Other views of Presocratics found in A are found elsewhere in 'dedicated' biographies, e.g. of Heraclitus at D.L. 9.10, ἐκλείπειν τε ἥλιον καὶ σελήνην, ἄνω στρεφομένων τῶν σκαφῶν, but there is no doxographical context involving the juxtaposition of views.

A number of texts report Thales as either the discoverer of the reason for solar eclipses or of the method of their prediction. Four texts record that this was stated by Eudemus in his Ἀστρολογικὴ ἱστορία (Diogenes, Clement, Hero, Theo of Smyrna: texts below); see also the report on Thales in the *Souda*, s.v. Θαλῆς.<sup>428</sup> Special mention should be made of Cicero *Rep.* 1.25, where *vidisse* may perhaps refer to actual observation and so recalls βλέπεσθαι in A's doxa on Thales. A doxographical source may have contributed to the formulation.

STRUCTURE (see above sect. 5)



RECONSTRUCTED TEXT

κδ'. Περί ἐκλείψεως ἡλίου

- 1 Θαλῆς πρῶτος ἔφη ἐκλείπειν τὸν ἥλιον τῆς σελήνης αὐτὸν ὑποτρεχούσης<sup>1</sup> κατὰ κάθετον, οὔσης φύσει γεώδους· βλέπεσθαι δὲ τοῦτο κατοπτρικῶς ὑποτιθεμένῳ τῷ δίσκῳ<sup>2</sup>.
- 2 οἱ Πυθαγόρειοι Ἐμπεδοκλῆς (ὁμοίως)<sup>3</sup>.

<sup>428</sup> Wehrli (1944–1978) 8.120, commenting on Eudemus fr. 143–145, suggests that A may have followed Eudemus rather than Theophrastus in 2.23–24. A direct link, however, is not likely. See further ch. 31 sect. 6.

- 3 Ἀναξίμανδρος τοῦ στομίου τῆς τοῦ πυρὸς διεκπνοῆς ἀποκλειομέ-  
νου.  
4 Ἡράκλειτος κατὰ τὴν τοῦ σκαφοειδοῦς στροφὴν, ὥστε τὸ μὲν  
κοῖλον ἄνω γίνεσθαι τὸ δὲ κυρτὸν κάτω πρὸς τὴν ἡμετέραν ὄψιν.  
5 Ξενοφάνης κατὰ σβέσιν· ἕτερον δὲ πάλιν πρὸς ταῖς ἀνατολαῖς  
γίνεσθαι· παριστόρηκε δὲ καὶ ἔκλειψιν ἡλίου ἐφ' ὅλον μῆνα καὶ  
πάλιν ἔκλειψιν ἐντελῇ, ὥστε τὴν ἡμέραν νύκτα φανῆναι.  
6 Ἔνιοι πύκνωμα<sup>4</sup> τῶν ἀοράτως<sup>5</sup> ἐπερχομένων τῷ δίσκῳ νεφῶν.  
7 Ἀρίσταρχος τὸν ἥλιον ἴστησι μετὰ τῶν ἀπλανῶν, τὴν δὲ γῆν<sup>6</sup> κινεῖ  
περὶ τὸν ἡλιακὸν κύκλον καὶ κατὰ τὰς ταύτης ἐγκλίσεις σκιαζεσθαι  
τὸν δίσκον<sup>7</sup>.  
8 Ξενοφάνης πολλοὺς εἶναι ἡλίους καὶ σελήνας κατὰ κλίματα<sup>8</sup> τῆς  
γῆς καὶ ἀποτομὰς καὶ ζώνας· κατὰ τινα δὲ καιρὸν ἐμπίπτειν τὸν  
δίσκον εἰς τινα ἀποτομὴν τῆς γῆς οὐκ οἰκουμένην<sup>9</sup> ὑφ' ἡμῶν, καὶ  
οὕτως ὥσπερ κενεμβατοῦντα ἔκλειψιν ὑποφαίνειν<sup>10</sup>. ὁ δ' αὐτὸς  
τὸν ἥλιον εἰς ἄπειρον μὲν προιέναι, δοκεῖν δὲ κυκλεῖσθαι διὰ τὴν  
ἀπόστασιν.

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1 ὑποτρεχούσης PS, ὑπερχομένης EG

2 P, ὑποτιθεμένην E (sc. τὴν σελήνην), ὑποτιθεμένον S, ταύτην ... ὑποτιθεμένην conJ. Wyttenbach

3 coniecimus, cf. S 1.26.2 (= ¶29.6\*)

4 πύκνωμα P<sup>1</sup>, πύκνωσιν νεφῶν P<sup>2</sup>

5 ἀοράτων E

6 σελήνην E

7 τὸν δίσκον om. S, abesse mavult Mau

8 κλίμα P

9 οἰκουμένης SE

10 ὑποφαίνειν P<sup>1</sup>ESQ, ὑπομένειν P<sup>2</sup> Diels

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§ 1 11A17a DK; § 2a–; § 2b 31A59 DK; § 3 12A21 DK; § 4 22A12 DK; § 5 21A41 DK;  
§ 6–; § 7–; § 8 21A41a DK

#### 24. On the eclipse of the sun

- 1 Thales was the first to say that the sun undergoes an eclipse when the  
moon with its earthy nature courses perpendicularly in between (it  
and the earth); this is visible by means of reflection when the disc (of a  
mirror) is placed beneath.  
2 The Pythagoreans and Empedocles hold a similar view.  
3 Anaximander (declares that the sun is eclipsed) when the mouth  
through which the outpouring of fire occurs is blocked.  
4 Heraclitus (declares that it undergoes an eclipse) in accordance with  
the turning of its bowl-like shape, so that the hollow aspect faces  
upwards and the convex aspect faces downwards in the direction of our  
vision.

- 5 Xenophanes (declares that it undergoes an eclipse) through quenching. But another sun occurs in the east. He has recounted that there was an eclipse (i.e. failure) of the sun for an entire month, and in addition that a total eclipse took place, so that the day appeared as night.
- 6 Some (thinkers declare that it is) a condensation of clouds invisibly passing in front of the (sun's) disk.
- 7 Aristarchus makes the sun stand still together with the fixed stars, while he moves the earth in the circle of the sun and (declares that) its disk is obscured in accordance with the tiltings of this body (i.e. the earth).
- 8 Xenophanes declares that there are many suns and moons in accordance with the latitudes of the earth and its sections and zones. But at a certain moment the (sun's) disk falls into a section of the earth that is not inhabited by us, and in this way, as if stepping into the void, it appears to undergo an eclipse. The same (thinker declares that) the sun advances indefinitely, but seems to go in a circle because of the remove (away from us).

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Aristotle** *APh.* 2.1 89b24, ζητοῦμεν δὲ τέτταρα, τὸ ὅτι, τὸ διότι, εἰ ἔστι, τί ἔστιν. ὅταν μὲν γὰρ πότερον τότε ἢ τότε ζητῶμεν, ... οἷον πότερον ἐκλείπει ὁ ἥλιος ἢ οὐ, τὸ ὅτι ζητοῦμεν ... ὅταν δὲ εἰδῶμεν τὸ ὅτι, τὸ διότι ζητοῦμεν, οἷον εἰδότες ὅτι ἐκλείπει καὶ ὅτι κινεῖται ἡ γῆ, τὸ διότι ἐκλείπει ἢ διότι κινεῖται ζητοῦμεν; cf. also *De div. per somn.* 1 462b28. **Epicurus** *ap.* D.L. 10.96, ἔκλειψις ἡλίου καὶ σελήνης δύναται μὲν γίνεσθαι καὶ κατὰ σβέσειν, καθάπερ καὶ παρ' ἡμῖν τοῦτο θεωρεῖται γινόμενον· καὶ ἤδη κατ' ἐπιπροσθήτησιν ἄλλων τινῶν, ἢ γῆς ἢ οὐρανοῦ ἢ (ἀοράτου conj. Usener) τινος ἐτέρου τοιούτου. καὶ ὧδε τοὺς οἰκείους ἀλλήλοις τρόπους συνθεωρητέον, καὶ τὰς ἅμα συγκυρήσεις τινῶν ὅτι οὐκ ἀδύνατον γίνεσθαι. [ἐν δὲ τῇ β' Περὶ φύσεως ταῦτά λέγει καὶ πρὸς, ἥλιον ἐκλείπειν σελήνης ἐπισκοτούσης, σελήνην δὲ τοῦ τῆς γῆς σκιάσματος, ἀλλὰ καὶ κατ' ἀναχώρησιν. τοῦτο δὲ καὶ Διογένης ὁ Ἐπικούρειος ἐν τῇ α' τῶν Ἐπιλέκτων. (scholion)] Cf. **Lucretius** 5.751–767. **Cicero** *Rep.* 1.25, erat enim tum haec nova et ignota ratio, solem lunae oppositu solere deficere, quod Thaletum Milesium primum vidisse dicunt. **Philo** *Prov.* 2.71, testantur autem magnopere providentia destitutam necessitatem, eclipsis solis defectioque luminis lunae: nam istae utilitatemne afferunt generi nostro? quum adsint multiplices causae adducendae. sol enim deficit, luna sub eo intrante conjunctionis tempore, cum advenit interlunium vel novilunium. **Hero** *mechanicus* *Def.* 11, cited above on 2.23. **Theon Smyrnaeus** *Expos.* 198.14–18, cited above on 2.23. **Themistius** *APh. paraphr.* 40.29 Wallies, ἐν Ἐπικούρῳ μὲν γὰρ δόξα ἦν ὅτι τῆς σελήνης ὑποτρεχούσης ὁ ἥλιος ἐκλιμπάνει· ὦετο γὰρ αὐτὸ ἐνδέχεσθαι καὶ ἄλλως ἔχειν ἐν Ἰπάρχῳ δὲ ἐπιστήμῃ (cf. Pliny *NH* 2.53, 57). **Servius** *Comm. in Verg. Georg.* 2.478 p. 264.1 Thilo, varios defectus secundum Epicurum, qui ait non unam causam pronuniandam, qua sol deficere videtur, sed varias: potest enim fieri ut extingatur, ut longius recedat, ut aliquod eum corpus abscondat. **Isidore of Seville** *De rer. nat.* 20 De eclipsi solis, solem sapientes dicunt altius

curre, lunam autem proximam esse terrae ... alii autem dicunt defectum solis fieri, si foramen aeris quo sol radios fundit aliquo spiritu contrahatur sive obturetur ... haec physici et sapientes mundi dicunt. *Souda* s.v. Θαλῆς 2.681 Adler, πρῶτος δὲ Θαλῆς τὸ τοῦ σοφοῦ ἔσχεν ὄνομα καὶ πρῶτος τὴν ψυχὴν εἶπεν ἀθάνατον ἐκλείψεις τε καὶ ἰσημερίας κατεΐληφεν.

Aëtius *Placita* 2.25

Περὶ οὐσίας σελήνης

WITNESSES

Ps.Plutarch 2.25, *Papyri Antinoopolis* 85 fr. 1r, Eusebius 15.26, ps.Galen 67, Johannes Lydus *De mensibus* 3.12, Qusṭā Ibn Lūqā 2.25  
Stobaeus 1.26.1a–k  
Theodoret 4.23  
Cf. Achilles 21

ANALYSIS

1. Having dealt with the sun in its diverse aspects, A turns to the moon and devotes no less than seven chapters to it (2.25–31), two more than on the sun. Following the same method used for the previous groupings of heaven–stars–sun, he commences with a chapter on its οὐσία. As in the case of the chapters on the stars (2.13) and the sun (2.20), it has a large number of doxai, for the most part very compactly presented. The chapter is particularly well attested. Not only are all three primary witnesses available, but P’s tradition is also complete and is complemented by a valuable extract in Lydus (L), who cites almost the entire chapter. A tiny papyrus fragment has also been found in Egypt. Moreover Achilles offers a parallel transmission.<sup>429</sup>

2. In the manuscript tradition P preserves seven lemmata as follows:

κε’. Περὶ οὐσίας σελήνης

- P2.25.1 Ἀναξίμανδρος κύκλον εἶναι ἐννεακαιδεκαπλασίονα τῆς γῆς,  
ὥσπερ <τὸν> τοῦ ἡλίου πλήρη πυρός· ἐκλείπειν δὲ κατὰ τὰς  
ἐπιστροφάς τοῦ τροχοῦ· ὅμοιον γὰρ εἶναι ἀρματίου τροχῷ κοίλην  
ἔχοντι τὴν ἀψίδα καὶ πλήρη πυρός, ἔχοντι μίαν ἐκπνοήν.  
P2.25.2 Ξενοφάνης νέφος εἶναι πεπιλημένον.  
P2.25.3 οἱ Στωικοὶ μκτὴν ἐκ πυρός καὶ ἀέρος.  
P2.25.4 Πλάτων ἐκ πλείονος τοῦ πυρώδους.

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<sup>429</sup> A full analysis of this chapter was presented in Runia (1989), the first of our publications that focused directly on Aëtius. The method adopted and the broad tenor of the results have remained the same, but some minor revisions have been introduced.

- P2.25.5 Ἀναξαγόρας Δημόκριτος στερέωμα διάπυρον, ἔχον ἐν ἑαυτῷ  
πεδία καὶ ὄρη καὶ φάραγγας.  
P2.25.6 Ἡράκλειτος γῆν ὁμίχλη περιειλημμένην.  
P2.25.7 Πυθαγόρας κατὰ τὸ πυροειδὲς σῶμα σελήνης.

As is the case for most of the chapters on the moon, there is considerable divergence on the title.<sup>430</sup> In the tradition of P the title is long in PQ (cf. S), while the short title without οὐσίας is found in EG. The contents of the chapter clearly assume the longer title and it is to be preferred. As in the chapter on the sun's substance, the doxa of Anaximander is longer than the rest, furnishing details about the moon's size and appearance which are not strictly relevant to the subject of the chapter.<sup>431</sup> The remaining doxai are short. The progression of views seems for the most part logical, moving from the moon as pure fire to an earthlike substance that can be hot or cool.

The four other witnesses contain a number of variant readings, especially in E (see the apparatus to the text below). In three cases this leads to contested readings that are important for the interpretation of the chapter:

- P2.25.2 Xenophanes: moon as νέφος πεπυρωμένον P<sup>1</sup>GLyduS;  
πεπιλημένον P<sup>2</sup>E; πεπυρωλημένον P<sup>3</sup> (papyrus unclear)  
P2.25.4 Plato: moon as ἐκ πλείονος τοῦ πυρώδους PLyduS, πυρός G,  
γεώδους E  
P2.25.7 Pythagoras: moon as κατὰ τὸ πυροειδὲς σῶμα PQ (?), κατὰ τὸ  
πυροειδὲς σχῆμα E, πυροειδὲς σῶμα LyduS (lemma omitted in  
G).

P's reading in P<sup>7</sup> is obviously corrupt. Mau obelizes; Lachenaud (who is editing P!) riskily follows Diels in passing over the entire tradition of P and opting for the reading in S (see below). We shall return to these textual problems in our more detailed analysis below. The text of the papyrus fragment published by Barns in 1960 covers two of the three disputed passages above.<sup>432</sup> Unfortunately it is too fragmentary to be of much assistance, but as we shall see it does discourage at least one possible conjecture.

<sup>430</sup> On these titles see further on the other chapters below and the detailed discussion of Mansfeld (2000b) 178–184.

<sup>431</sup> We take ἐκλείπειν to refer primarily to the phases of the moon.

<sup>432</sup> Barns–Zilliacus (1960) 75; on these papyri see Vol. I:126–130.

3. As was the case for the doxai on the sun, S brings together all the chapters in A on the moon into a single chapter. Here, however, his procedure differs a little. He decides that it would be too complicated to coalesce together the material of seven entire chapters, so he follows this method only for ch. 25–27, and writes out the remaining four chapters apparently as he found them (cf. Vol. I:218). This procedure makes our task of reconstruction a good deal easier, for now only three chapters have to be disentangled and stripped of their accretions. The text for the three coalesced chapters in its entirety reads as follows:

- 1.26 title    *Περὶ σελήνης οὐσίας καὶ μεγέθους καὶ σχήματος*<sup>433</sup>  
 1a            Ἀναξίμανδρος κύκλον εἶναι ἐννεακαίδεκαπλάσιον τῆς γῆς, ὅμοιον ἀρματεῖω (τροχῷ), κοίλην ἔχοντι τὴν ἀψίδα καὶ πυρὸς πλήρη, καθάπερ (τὸν) τοῦ ἡλίου, κείμενον λοξόν, ὡς ἀκκείνον, ἔχοντα μίαν ἐκπνοήν, οἷον πρηστήρος αὐλόν· ἐκλείπειν δὲ κατὰ τὰς ἐπιστροφάς τοῦ τροχοῦ. (= P1)  
 1b            Ἀναξίμενης πυρίνην τὴν σελήνην.  
               Παρμενίδης πυρίνην.—ἴσῃν δὲ τῷ ἡλίῳ, καὶ γὰρ ἀπ’ αὐτοῦ φωτίζεται.  
 1c            Ἡράκλειτος σκαφοειδῇ τῷ σχήματι.  
 1d            Ξενοφάνης νέφος εἶναι πεπλημένον. (= P2)  
 1e            Θαλῆς γεώδη τὴν σελήνην ἀπεφνήματο.  
               Ἀναξαγόρας Δημόκριτος στερέωμα διάπυρον, ἔχον ἐν ἑαυτῷ πεδία καὶ ὄρη καὶ φάραγγας. (= P5)  
               Διογένης κισσηροειδὲς ἄναμμα τὴν σελήνην.  
               Ἴων σῶμα τῇ μὲν ὑελοειδές, διαυγές, τῇ δὲ ἀφεγγές.  
               Βήρωσος ἡμπύρωτον σφαῖραν τὴν σελήνην.  
               Ἡρακλείδης καὶ Ὁκελλος γῆν ὁμίχλην περιεχομένην. (cf. P6)  
               Πυθαγόρας κατοπτροειδὲς σῶμα. (cf. P7)  
 1f            Ἐμπεδοκλῆς ἀέρρα συνεστραμμένον νεφοειδῇ, πεπηγότα ὑπὸ πυρός, ὥστε σύμμικτον.—δισκοειδῇ δὲ τῷ σχήματι.  
               τινὲς δὲ κυλινδροειδῇ.  
 1g            Πλάτων ἐκ πλείονος τοῦ πυρός εἶναι τὴν σελήνην. (= P4)  
 1h            Ἀριστοτέλης σελήνην ἐν μεθορίοις ἀέρος τεταγμένην καὶ τῆς πέμπτης οὐσίας μετέχουσαν ἐν μηνὶ περιέρχεσθαι τὸν ἴδιον κύκλον.—ἐλάττονα δὲ τῆς γῆς εἶναι τῷ μεγέθει.  
 1i            Ζήνων τὴν σελήνην ἔφησεν ἄστρον νοερόν καὶ φρόνιμον, πύρινον δὲ πυρὸς τεχνικοῦ.  
               Κλεάνθης πυροειδῇ τὴν σελήνην, πλοειδῇ δὲ τῷ σχήματι.  
 1k            Ποσειδώνιος δὲ καὶ οἱ πλείστοι τῶν Στωικῶν μικτὴν ἐκ πυρός καὶ ἀέρος.—μείζονα δὲ τῆς γῆς, ὡς καὶ τὸν ἥλιον.—σφαιροειδῇ δὲ τῷ σχήματι· σχηματίζεσθαι δὲ αὐτὴν πολλαχῶς, καὶ γὰρ πανσέληνον γινομένην καὶ διχότομον καὶ ἀμφίκυρτον καὶ μηνοειδῇ. (cf. P3)

<sup>433</sup> Wachsmuth adds from Photius as subtitles the titles of the remaining chapters as found in P. This need not concern us here.



- 11 Χρύσιππος τὸ ἀθροισθὲν ἕξαμμα μετὰ τὸν ἥλιον νοερόν ἐκ τοῦ ἀπὸ τῶν ποτίμων ὑδάτων ἀναθυμιάτος· διὸ καὶ τοῦτοις τρέφεσθαι. σφαιροειδῇ δὲ εἶναι. μῆνα δὲ καλεῖσθαι τὴν τοῦ δροῖμου αὐτῆς περίοδον. μεις δ' ἐστὶ, φησί, τὸ φαινόμενον τῆς σελήνης πρὸς ἡμᾶς, ἢ σελήνη μέρος ἔχουσα φαινόμενον πρὸς ἡμᾶς.

Firstly we can observe that all P's doxai can be located in S (see bracketed references), but their order is slightly different (P1-2-5-6-7-4-3) and there are various differences in name-labels and text. Let us examine the individual doxai of S's sequence as briefly as we can.

- 1a. The formulation of Anaximander's doxa contains the same elements as in P, but in a different sequence, with the addition of the detail of the circle's obliquity and the comparison with a pair of bellows (cf. ¶20.1\*). The repetition of *πυρὸς πλήρη* in P is cumbersome, so perhaps S is closer to the original text in this case. Anaximenes is added on because he has the same basic view on the substance of the moon (but not on the rest).
- 1b–c. But Parmenides has the very same doxa as Anaximenes, so it is likely that S has split up a composite name-label. From T we learn that the name-label of Heraclitus was joined to the other two as well, but S appears to have left it out, unless it was dropped through a scribal error, i.e. the text was Ἡράκλειτος (πυρίνην,) σκαφοειδῇ τῷ σχήματι.
- 1d–e. These eight doxai look very much like a continuous block (note that the order is the same as in P, i.e. 2-5-6-7, but P<sub>3</sub> and P<sub>4</sub> are not included). However, it cannot be considered certain that Xenophanes is part of the block, since his view differs in the sun's not being earthy. It is safer to say that only the final seven form a block (as Wachsmuth concluded when devising his numbering). In the case of P6, S has the name-label Heraclides, which is confirmed by T, to which is added that of Ocellus. Diels *DG* 100, 216, 356 argued that the latter had been added by S, but the reason he gives—that it is missing in PT—is obviously insufficient. It should be retained.<sup>434</sup>
- 1f. The position of the Empedoclean doxa is problematic. Diels thought he should retain Stobaeus' order and so placed it at the very end of the chapter, i.e. after Pythagoras. But then its position is completely isolated. In terms of content it is very similar to the Stoic view as recorded in P (both a mixture of fire and air, but for Stoics fire comes first, whereas for Empedocles air has the primacy). We return to this doxa below.

<sup>434</sup> Diels is followed by Harder (1926) 39, Burkert (1972) 246 n. 38. It is admittedly the only reference to this philosopher in the *Placita*. But cf. his inclusion in the doxography on the archai at S.E. *Adv. phys.* 1.316 and on the indestructibility of the cosmos at Philo *Aet.* 12.

- 1g. The Platonic doxa is the same as in P, except that S adds εἶναι τὴν σελήνην because of the extra material coalesced in 1f. This means that S did not replace the doxa with Plato's own words, as he often does elsewhere (cf. Vol. I:265). But here it follows the block of doxai in 1e, whereas in P it precedes them.
- 1h. Aristotle follows Plato, as in 2.13.12\* (but not 2.20.11\*). The actual doxa differs quite considerably from what is found in those chapters. Here for the first time in this chapter we must suspect that S has absorbed material from outside the *Placita*, i.e. from AD. The tell-tale sign is that it deals with three subjects (location, substance, motion) rather than just one. Comparison with the other two οὐσία chapters makes it likely that an Aristotelian lemma was present in A.
- 1i-1. The section concludes with no less than 4 lemmata devoted to Stoic views. Clearly at least some of these derive from AD. In the case of the Zenonian lemma this is certain through comparison with S 1.25.5. S has simply repeated the phrase on the moon's substance. In the case of the Chrysippean lemma it is harder to decide, because S may have coalesced material from other chapters. Nevertheless it seems more likely that this extract is from AD for two reasons: (a) the Stoic doxa on the cosmos' shape has already been coalesced in the previous lemma; (b) there seems hardly room for information on the moon's motion and its name in the three chapters coalesced by S. On the other hand the lemma with the name-label Ποσειδώνιος δὲ καὶ οἱ πλεῖστοι τῶν Στωικῶν must derive from A, since it is paralleled in P, who has simplified the name (the connecting particle is no doubt an addition of S in order to mark the contrast with the preceding lemma). The formulation of the name-label suggests that there may have been a Stoic who held an exceptional position. The most likely candidate is Cleanthes; cf. 2.14.2\* on the shape of the stars. Although certainty is impossible in such matters, we surmise against Diels that the two Cleanthean doxai derive from A. S will have changed the order to Zeno Cleanthes because of the teacher-pupil relation. As for the place in A's chapter, the evidence of P suggests that S has relegated all the Stoic material to the end of the chapter, as he so often does when he has material from AD. Indeed the chapter ends with the sequence Plato, Aristotle, diverse Stoics. The correspondence with the three schools dealt with by Arius Didymus is exact.

The result of the above analysis, when the extraneous material from AD has been filtered out, is that seventeen doxai remain as follows:

S1 Anaximander—S2 Anaximenes—S3 Parmenides—S4 Heraclitus—S5 Xenophanes—S6 Thales—S7 Anaxagoras Democritus—S8 Diogenes—S9 Ion—S10 Berosus—S11 Heraclides Ocellus—S12 Pythagoras—S13 Empedocles—S14 Plato—S15 Aristotle—S16 Posidonius and most of the Stoics—S17 Cleanthes.

Various textual and structural problems remain. But first we turn to the remaining evidence.

4. T follows his section on the sun with a paragraph on the subject of the moon. Earlier in 4.21 he had already coalesced the doxai of Xenophanes on the two planets:

*GAC* 4.21, 105.16–106.1

T1    καὶ μέντοι καὶ τὸν ἥλιον καὶ τὴν σελήνην ὁ Ξενοφάνης νέφη εἶναι  
πεπυρωμένα φησίν·

At 4.23 he continues with the following sequence:

*GAC* 4.23, 106.7–12

καὶ περὶ σελήνης δὲ ὁμοίως ὑθλοῦσιν·

T2    γεώδη μὲν γὰρ αὐτὴν ὁ Θαλῆς φησιν,

T3    Ἀναξίμενης δὲ καὶ Παρμενίδης καὶ Ἡράκλειτος ἐκ μόνου ξυνεστάναι  
πυρός·

T4    Ἀναξαγόρας δὲ καὶ Δημόκριτος στερέωμα διάπυρον, ἔχον ἐν ἑαυτῷ  
πεδία καὶ ὄρη καὶ φάραγγας·

T5    ὁ δὲ Πυθαγόρας πετρῶδες σῶμα·

T6    Ἡρακλείδης δὲ γῆν ὁμίχλη περιεχομένην.

If we include the earlier doxa of Xenophanes, T preserves six views. As noted earlier he confirms for us that the doxai of Anaximenes, Parmenides and Heraclitus, which have been separated in S, were originally presented in A as a single view with a multiple name-label. He also confirms that the name-label of Heraclitus in P has been corrupted from the original Heraclides in A. But the order differs from what we found in S in two respects. Thales' doxa has been brought forward into first position, perhaps for chronological reasons, but also because it highlights the distinction between the main views of the moon as earth and as fire. For the reversal of Pythagoras and Heraclides we may suspect that T, reading πετρῶδες σῶμα for the view of Pythagoras, has seen a connection with the 'plains and mountains and ravines' of Anaxagoras–Democritus, and so altered the order.

5. The evidence of Achilles should also be cited, although he helps us little with the specific details of this chapter. At the beginning of ch. 21 *Περὶ σελήνης* he gives various brief and chaotic extracts from a doxographical source:

*Isagoge* 21, 49.1–8 Maass ~ 30.6–12 Di Maria

- Ach1 τινὲς οὐδὲ ὅλως βούλονται εἶναι σελήνη.  
 Ach2 ἄλλοι δὲ αὐτὴν ἐξ ἀναθυμιάσεως γῆς εἶναι λέγουσιν,  
 Ach3 ἔτεροι δὲ ἐκ πυρός,  
 Ach4 ἄλλοι καὶ ἀέρος,  
 Ach5 ἄλλοι ἐκ τῶν τεσσάρων στοιχείων,  
 Ach6 ἔτεροι δὲ γῆν πεπυρωμένην στερέμνιον ἔχουσιν πῦρ, εἶναι δὲ ἐπ’  
 αὐτῆς οἰκῆσιν ἄλλην ποταμούς τε καὶ ὅσα ἐπὶ τῆς γῆς, καὶ τὸν  
 λέοντα τὸν Νεμεαῖον ἐκείθεν πεσεῖν μυθολογοῦσιν.  
 Ach7 Ἐμπεδοκλῆς δὲ ἀπόσπασμα αὐτὴν φησὶν ἡλίου.

The first doxa that some thinkers deny the moon’s existence may seem surprising. It is possible that it results from a mechanical application of Aristotelian question-types, of which the first is εἰ ἔστιν, whether something actually exists or not; compare A at P 1.7 on the gods, which starts off with a long section on atheism, and P 1.24.1 denying existence of generation and change (cf. Arist. *Cael.* 3.1 298b12–19).<sup>435</sup> Another possibility is that it is a direct reflection of the example that Aristotle uses at *APo.* 2.1 90a6 (text below), which was taken out of its epistemological context (example of a lunar eclipse as an item of scientific knowledge).<sup>436</sup> For the other doxai we note the following correspondences:

Ach2: not in A, but parallel to 2.20.5–6\* on the sun, i.e. probably an alternative Xenophanean or Stoic view.

Ach3: equivalent to the doxa of Anaximenes etc. in A (S2–4, T3).

Ach4: parallel to the doxa of Posidonius and the Stoics in A (S16).

Ach5: this is presumably the Platonic view (cf. S14); cf. Ach ch. 11 on the οὐσία of the stars, but there he adds πλείστου δὲ πυρός.

Ach6: equivalent to the Anaxagoras–Democritus lemma in A (P5, S7, T4), with the basic earthy nature coming better to the fore. It should be noted that στερέμνιον goes with γῆν and not πῦρ, as the parallel at Plu. *De facie* 934B makes clear. Remarkably the mention of the Nemean lion also occurs there at 937F (cf. Anaxagoras fr. A77 DK).

Ach 7: quite different to the Empedoclean doxa in A (S13); the same view is coupled with fr. B45 in Ach § 16 on the order of the seven spheres.

We see, then, that four of A’s views are located in this list. Apart from the first doxa, there seems to be little structure in the chapter. Ach seems to just meander his way through the elements.

<sup>435</sup> On such doxai see further above Part I sect. 14 at n. 350.

<sup>436</sup> If the moon is eclipsed, there is no moon, but there is night. Another explanation would be that the moon that we see does not really exist but is a phantasm or reflection; cf. Gundel (1935) 80.

Finally, there is a short scrap in the *Scholia in Aratum* which is worth recording (27.20–28.2 Martin, 319.9–12 Maass):

ιζ'. Σελήνη

SchAr1 τὴν δὲ σελήνην σύγκριμα ἐκ πυρὸς καὶ ἀέρος· διὰ τοῦτο καὶ  
πάντων κατωτέρα(ν) τῶν ἀστέρων.

SchAr2 οἱ δὲ κάτοπτρόν τι.

The first doxa is basically that of Posidonius and the Stoics in A. The term σύγκριμα is not found there, but it does occur in the Stoic doxa in 2.30.6\* on the moon's appearance.<sup>437</sup> The second doxa is very interesting because it is the only evidence that supports the reading of S for the doxa of Pythagoras, κατοπτροειδὲς σῶμα. The Scholion cannot be derived from Ach, at least not in the state he has come down to us, nor are the doxai taken straight from A. It is incontestable, however, that they come from a shared tradition.<sup>438</sup>

6. Having set out all the evidence, our task is now to determine what was present in A's chapter and in which order the doxai stood. It will not be an easy matter and not all uncertainties can be eliminated. We proceed by means of the following steps.

(1) The order in P corresponds well with the order in S, except in the case of P<sub>3</sub> (Stoics) and P<sub>4</sub> (Plato), which S places towards the end of the chapter as S<sub>14</sub> and S<sub>16</sub>. Since it is common for S to move such material to the end and/or replace it with AD, we should follow P. Moreover, as noted above, it is probable that Aristotle (S<sub>15</sub>) followed Plato.

(2) The doxa of Anaximenes–Parmenides–Heraclitus (S<sub>2–4</sub>) follows Anaximander (P<sub>1</sub>, S<sub>1</sub>), as in P.

(3) The seven doxai S<sub>6–12</sub> form a block, the order of which should be retained.

(4) The doxa of Xenophanes (P<sub>2</sub>, S<sub>5</sub>) does not necessarily belong to this block. The order in P suggests that it was placed earlier in the chapter, before Posidonius–the Stoics.

(5) As noted above, it makes little sense to place the doxa of Empedocles (S<sub>13</sub>) straight after the block as it is found in S. The view is close to that of the Stoics and no doubt immediately followed it. It is to be suspected that S overlooked it when he passed over the Stoics, Plato and Aristotle, then noticed it and placed it after the block, before moving on the main

<sup>437</sup> Cf. also in Philo's description on the moon, discussed below in sect. 8.

<sup>438</sup> Cf. Vol. I:306 and also the comments at Mansfeld (2000b) 190–191.

schools and their founders.

The sequence obtained by the above steps can be set out as follows:

A1	Anaximander	fire (like the sun)
A2	Anaximenes–Parmenides–Heraclitus	fiery
A3	Xenophanes	condensed cloud (?)
A4	Posidonius and most Stoics	fire and air
A5	but Cleanthes	fire-like
A6	Empedocles	air mixed with fire
A7	Plato	mostly of fire (?)
A8	Aristotle	fifth element
A9	Thales	earthy
A10	Anaxagoras–Democritus	red hot solid body
A11	Diogenes	pumice-like ignited mass
A12	Ion	transparent body
A13	Berosus	semi-inflamed sphere
A14	Heraclides–Ocellus	earth surrounded by mist
A15	Pythagoras	fiery body (?)

The question marks indicate the three unresolved textual problems raised by the tradition of P, as noted above in sect. 2. In two cases the answer cannot be solved without taking into account the chapter's overall interpretation.

- (a) For the Xenophanean doxa (A3) the extra sources do not resolve the situation, S supporting the reading *πεπιλημένον*, T the reading *πεπυρωμένον*. In our extended discussion of this question we put forward the view that the position of the doxa in A's sequence makes it probable not only that Xenophanes' cloud was at least 'fiery' (all the first 7 lemmata propound this view to a greater or lesser degree), but also that it is likely that the cloud was 'compressed', in order to differentiate it from the sun and other heavenly bodies.<sup>439</sup> The original text thus would have contained both participles, which can help to explain the persistence of both readings in the tradition and the curious reading in the Moscow ms. 501 (which in fact amounts to *πεπυρω(μένον πεπι)λημένον*). If the juxtaposition of the two participles seems a little forced, one might compare the doxa Ach6, where the moon is *πεπυρωμένην στερέμνιον ἔχουσιν πῦρ*. It should be noted that the evidence of the papyrus, by recording only the last three letters of a participle ending in *vov*, cannot help us decide between the two readings, but also does not allow room for both participles.<sup>440</sup> But the evidence is not entirely fatal to our conjecture, since one of the participles could have already been dropped in the early textual tradition represented by the papyrus. We are bold enough to retain it in our reconstructed text.

<sup>439</sup> Runia (1989) 265–267.

<sup>440</sup> This evidence was not known to us as the time of writing the article.

- (b) For the Platonic lemma the witnesses offer three different readings (see apparatus). E's reading is certainly a mistake. Between PLQ and SG there is little to choose from. We opt for ἐκ πλείονος τοῦ πυρώδους as the *lectio difficilior*, since S and G may have been influenced by the text at *Ti.* 40a2 τοῦ μὲν οὖν θείου τὴν πλείστην ἰδέαν ἐκ πυρὸς ἀπηργάζετο; note the paraphrase at Alcinous *Did.* 14 34.23 Whittaker, ἐπὶ σώματα ὁ θεὸς δημιουργήσας ὁρατὰ ἐκ πυρώδους τῆς πλείστης οὐσίας. If we are correct, A may be making quite a subtle distinction here between Plato's views on the moon and the sun, for the latter was, as we recall, ἐκ πλείστου πυρὸς (2.20.7\*).
- (c) For the Pythagorean doxa S and T offer additional variants. The readings in the Plutarchean tradition—the moon as fiery body *vel. sim.*—would seem most unlikely, we submit, in the light of the main structural division between fiery and earthy views that we shall postulate in the following section of our analysis. The lemma would have been located close to those who think the moon has a basically fiery substance, i.e. earlier in the chapter. T's reading πετῶδες σῶμα is certainly not impossible. But given the Pythagorean views involving reflection in two nearby chapters (2.20.12\* Philolaus, 2.30.2\* other Pythagoreans), it would appear that Diels was right in giving preference to S's reading κατοπτροειδὲς σῶμα (it is clearly the *difficillima lectio*).<sup>441</sup> It is moreover unexpectedly supported by the reading κάτοπτρόν τι in the *Scholia in Aratum*.

The table given above can thus be completed as follows:

A3	Xenophanes	fiery condensed cloud
A7	Plato	mostly of fiery (material)
A15	Pythagoras	mirror-like body.

The order that we suggest certainly deviates from what we find in T, i.e. T3–(T1)–T2–T4–T6–T5. In each case, however, reasons could be given for why T, who is always very free in his adaptations, might have wished to deviate from the source that he had in front of him; see further our analysis above in sect. 4. On the other hand, our suggested order does correspond well with the doxai also found in Achilles, i.e. Ach3–6, even though there is no direct relation between the two texts.

7. We are now at long last in a position to uncover the structure of the chapter with its long sequence of fifteen views. It is apparent that the chapter is dominated by a basic division (i.e. a type A diaeresis) between the view that the moon is basically fiery and the view that it is primarily made of earth. The 'leaders' of the two groups are the venerable

<sup>441</sup> *DG* 357; but it was wrong of him to *emend* the virtually unanimous reading in the tradition of P (contrast his procedure in the Platonic lemma, where he did leave the mss. reading in the text). Mau retains the reading between daggers.

Milesians, Anaximander and Thales.<sup>442</sup> Anaximander's view that the moon is fiery is followed by two very similar doxa (§§ 2–3). Then a number of doxai follow in which fire is mixed with other elements, particularly air (§§ 4–8). The Aristotelian lemma has to be conjectured, as argued above, because it was replaced by an extract from AD. It might be seen as an exceptional view, since the fifth element is not fiery in the strict sense. We note, however, that in 2.30.7\*, in the chapter on the moon's face, Aristotle is recorded as stating that the moon's ethereal composition is not pure, but contains an admixture of *πρόσγεα ἀερώματα*. Such a view would also fit very well into the structure of this present chapter (but it would be too risky to conjecture it). In general the mixed fire views involve the other elements and thus form a bridge to the earthy views (i.e. suggestive of a type C diaeresis).

In the second half of the chapter the emphasis falls on the earthy or the solid nature of the moon's substance. At the end of the chapter the sequence of doxai becomes less well organized and appears to degenerate into a mere list of various views. One might have expected the views of Ion—that the moon is partly of transparent glassy material and partly dark, implying a mixture of earth and (a limited amount of) water<sup>443</sup>—and Pythagoras (on S's reading) to be linked. Clearly there is some overlap with the subject of 2.30 on the moon's unusual appearance, where the same division is used. See further on that chapter below. For both halves there seems to be a movement from 'pure' to mixed or exceptional views. The arrow in the diagram below indicates the general movement from light and rarified (fire) to heavy and solid (earthy).

The text of the reconstructed chapter thus reveals fifteen doxai, the same as in 2.13\* on the substance of the stars and 2.20\* on the substance of the sun. They are the longest chapters in Book II. No doubt this parallelism is deliberate. On the question of substance there is the greatest diversity of views. One difference compared to the other two chapters is the absence of Epicurus.

8. The dialectical-doxographical parallels for the present chapter on the moon's οὐσία are not particularly copious (we have found no texts

<sup>442</sup> If the parenthetical Cleanthean doxa is not included, both halves of the division would have seven doxai. Given the role of seven in other doxographies, this may not be coincidental; cf. the comment of Mansfeld cited at Runia (1989) 264 n. 46.

<sup>443</sup> Cf. Plato *Ti.* 61c, Aristotle *Met.* 4.10 389a8.



where it is used as a rhetorical example), but it is clear from what we have collected that the diaeresis of this chapter reflects the main division of opinion on the subject in antiquity.<sup>444</sup> In particular we draw attention to the famous treatise that Plutarch devotes to the face of the moon. It is surely significant that we can trace individual doxai recorded in A which Plutarch reports with much embellishment: cf. 921F Στωικὴ δόξα, 922C Empedocles, 928E Aristotle (ἡμίπυρον also recalls Berosus' view), 929D Posidonius (differs from A), 943E Plato, 944A Xenocrates (not in A). We note, however, that Plutarch is less interested in Presocratic views than the doxographer. More importantly, close reading shows that the basic diaphonia between fiery–light and earthy–heavy dominates the entire work; see esp. 921E, 936E (cited below). The dispute between Stoics and Academics in fact turns on this opposition. When, however, he finally gets to the Platonic view at 943F it emerges that he seeks the *compromise* view, i.e. the moon as mixture of earth and fire–light. This comes out very clearly in the final words of the treatise, 945D, where an analogy is drawn between the moon as intermediate between heaven and earth and the soul as intermediate between mind and body. It is doubtless no coincidence that at 922B Plutarch formulates one side of the question in the characteristic terms of a θεός, εἰ οὖν ἡ σελήνη πῦρ ἐστὶ. We recall the adaptation of the θεός found in Philo's *De aeternitate mundi*, where a third view is also found beyond the alternatives of the original *quaestio*.<sup>445</sup> Plutarch's treatise also illustrates the restricted perspective of the *Placita*. The entire question of the moon's ensouled and divine nature, which plays a central role in the discussion, falls outside the scope of A's doxography.

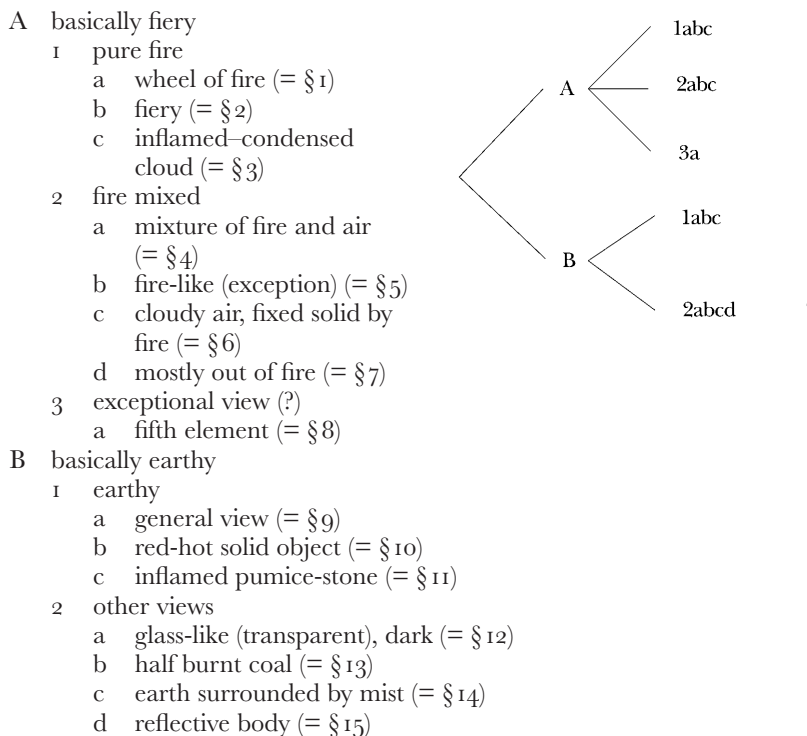
Two other texts should be mentioned, even though they involve single doxai only. At *Ac.* 2.123 (where it is certain that he is drawing on a doxographical tradition anterior to A, cf. esp. above ch. 21 sect. 7–8) Cicero cites Xenophanes as holding the view that the moon is

<sup>444</sup> See the collections of material on the moon in Gundel (1935), Préaux (1973) and note in particular the statement of the latter (157): 'Du point de vue de la physique des quatre éléments, un premier problème se posait; de quelle matière est faite la lune? Deux réponses s'affrontent: de terre ou de feu. Le choix—on verra, il est vrai, qu'il y a aussi une réponse mitigée—dépend de l'origine qu'on attribue à la luminosité de la lune.' (We note that unlike the modern historian, A does not link up the these two questions explicitly.) The authors use the doxographical material extensively, but exclusively in a 'history of ideas' approach that concentrates on the contributions of individual views. So among the mass of material collected there is little to aid us in our specific enquiry.

<sup>445</sup> See Runia (1981) 112–119, and above ch. 4, sect. 7.

inhabited and is a land of many mountains and cities. Presumably this should be Anaxagoras (whose *doxa* in A mentions mountains).<sup>446</sup> The confusion could have been caused in his mind by the Xenophanean *doxa* in the previous chapter, which talks about uninhabited parts of the earth in connection with eclipses of the sun and the moon. At Philo *Somn.* 1.145 we encounter a passage where he gives Stoic *doxai* on the οὐσία and ἔμφασις of moon (cf. below at 2.30) because it happens to fit his exegesis. No doubt his source is the same as that used extensively elsewhere in *De somniis*; see above ch. 11 sect. 4(3).

STRUCTURE (see above sect. 7)



<sup>446</sup> Thus Reid (1925) *ad loc.*, following Diels *DG* 121 n. 1, *VS* 1.125. Cherniss *ad Plu. De facie* 937<sup>D</sup> advocates Xenocrates, but the doxographical background weighs against this view.

## RECONSTRUCTED TEXT

κε'. Περὶ οὐσίας σελήνης<sup>1</sup>

- 1 Ἀναξίμανδρος κύκλον εἶναι ἐννεακαιδεκαπλάσιον τῆς γῆς, ὅμοιον  
ἀρματεῖω (τροχῷ) κοίλῃν ἔχοντι τὴν ἀψίδα καὶ πυρὸς πλήρη,  
καθάπερ (τόν) τοῦ ἡλίου, κείμενον λοξόν, ὥς ἀκκεῖνον, ἔχοντα  
μίαν ἐκπνοήν, οἷον πρηστήρος αὐλόν· ἐκλείπειν δὲ κατὰ τὰς  
ἐπιστροφὰς τοῦ τροχοῦ<sup>2</sup>.
- 2 Ἀναξιμένης Παρμενίδης Ἡράκλειτος πυρίνην τὴν σελήνην.
- 3 Ξενοφάνης νέφος εἶναι πεπυρωμένον πεπιλημένον<sup>3</sup>.
- 4 Ποσειδώνιος [δὲ]<sup>4</sup> καὶ οἱ πλείστοι τῶν Στωικῶν<sup>5</sup> μικτήν<sup>6</sup> ἐκ πυρὸς  
καὶ ἀέρος,
- 5 Κλεάνθης (δὲ) πυροειδῇ<sup>7</sup>.
- 6 Ἐμπεδοκλῆς ἀέρα συνεστραμμένον νεφροειδῇ, πεπηγότα ὑπὸ  
πυρὸς, ὥστε σύμμικτον.
- 7 Πλάτων ἐκ πλείονος τοῦ πυρῶδους<sup>8</sup>.
- 8 Ἀριστοτέλης (ἐκ τοῦ πέμπτου σώματος)<sup>9</sup>.
- 9 Θαλῆς γεώδη<sup>10</sup>.
- 10 Ἀναξαγόρας Δημόκριτος στερέωμα διάπυρον, ἔχον ἐν ἑαυτῷ πεδία  
καὶ ὄρη καὶ φάραγγας.
- 11 Διογένης κισηροειδὲς ἄναμμα<sup>11</sup>.
- 12 Ἴων σῶμα τῇ μὲν ὑελοειδές, διαυγές, τῇ δὲ ἀφεγγές.
- 13 Βῆρωσος ἡμιπύρωτον σφαῖραν<sup>12</sup>.
- 14 Ἡρακλείδης καὶ Ὁκελλος<sup>13</sup> γῆν ὁμίχλην περιεχομένην<sup>14</sup>.
- 15 Πυθαγόρας κατοπτροειδὲς σῶμα<sup>15</sup>.

1 PQS, Περὶ σελήνης EG cf. Ach

2 ὅμοιον ... τροχοῦ S; v.l. ὥσπερ (τόν) τοῦ ἡλίου πλήρη πυρὸς· ἐκλείπειν δὲ κατὰ  
τὰς ἐπιστροφὰς τοῦ τροχοῦ· ὅμοιον γάρ εἶναι ἀρματεῖου τροχῷ κοίλῃν ἔχοντι τὴν  
ἀψίδα καὶ πλήρη πυρὸς, ἔχοντι μίαν ἐκπνοήν P, ὅμοιον δὲ ... ἔχοντι ... πυρὸς  
πλήρη ... ἔχοντα E

3 πεπυρωμένον P<sup>1</sup>LQGT, πεπυρωλῆμένον P<sup>2</sup>, πεπιλημένον P<sup>3</sup>ES, πεπυρωμένον  
πεπιλημένον coniectimus

4 δέ S, seclusimus

5 Ποσειδώνιος ... Στωικῶν S, οἱ Στωικοί P

6 μικτόν E

7 Κλεάνθης πυροειδῇ τὴν σελήνην S, δὲ inseruimus

8 πυρῶδους PLQ, πυρὸς SG, γεώδους E

9 σελήνην ἐν μεθορίοις ἀέρος τεταγμένην καὶ τῆς πέμπτης οὐσίας μετέχουσαν ἐν  
μηνι περιέχεσθαι τὸν ἴδιον κύκλον S, sed veri simile ex Ario Didymo; supple-  
vimus ex 2.13 (cf. 2.20)

10 τὴν σελήνην ἀπεφάνετο add. S ipse

11 τὴν σελήνην add. S

- 12 τὴν σελήνην add. S  
 13 Ἡρακλείδης καὶ Ὁκελλος S, Ἡράκλειτος P, καὶ Ὁκελλος secl. Diels  
 14 περιεχομένην ST, περιειλημμένην P  
 15 κατοπτροειδὲς σῶμα S, κατὰ τὸ πυροειδὲς σῶμα PQ, κατὰ τὸ πυροειδὲς σχῆμα E, πυροειδὲς σῶμα Lydus, πετρώδες σῶμα T, cf. *Sch. Arat.* κάτοπτρόν τι

§ 1 12A22 DK; § 2a 13A16 DK; § 2b 28A42 DK; § 2c cf. T446 Mouraviev; § 3 21A43 DK; § 4 F122 E.-K., *SVF* 2.671, 506; § 5—; § 6 31A60 DK; § 7—; § 8 cf. T19 Gigon; § 9—; § 10a 59A77 DK; § 10b 68A90 DK; § 11 64A14 DK; § 12 36A7 DK; § 13 *FGH* 680 F19a; § 14a fr. 114a Wehrli, 76 Schütrumpf; § 14b T9 Harder; § 15—

## 25. On the substance of the moon

- 1 Anaximander (declares that the moon is) a circle nineteen times the earth, resembling a chariot wheel with a hollow rim and full of fire, like the (circle) of the sun, lying tilted, as that one (i.e. of the sun) does too, with a single blowhole, like the nozzle of a set of bellows; and it undergoes eclipse in accordance with the turnings of the wheel.
- 2 Anaximenes, Parmenides and Heraclitus (declare that) the moon is fiery.
- 3 Xenophanes (declares that it is) an inflamed condensed cloud.
- 4 Posidonius and most of the Stoics (declare that it is) combined out of fire and air,
- 5 but Cleanthes (declares that it is) fire-like.
- 6 Empedocles (declares that it is) cloud-like compacted air; fixed by fire so that it forms a compound.
- 7 Plato (declares that it is formed) for the most part from fiery (material).
- 8 Aristotle (declares that it is formed) from the fifth body.
- 9 Thales (declares that it is) earthy.
- 10 Anaxagoras and Democritus (declare that it is) an inflamed solid mass, which has in it plains and mountains and ravines.
- 11 Diogenes (declares that it is) a sponge-like ignited mass.
- 12 Ion (declares that it is) a body that is partly glass-like and transparent, partly opaque.
- 13 Berosus (declares that it is) a half-inflamed sphere.
- 14 Heraclides and Ocellus (declare that it is) earth surrounded by mist.
- 15 Pythagoras (declares that it is) a mirror-like body.

## DIALECTICAL-DOXOGRAPHIC PARALLELS

**Democritus** fr. 68B5 DK, see above on ch. 20. **Aristotle** *APo.* 2.1 90a2–5, λέγω δὲ τὸ ὅτι ἔστι ἐπὶ μέρους καὶ ἀπλῶς, ἐπὶ μέρους μὲν, ἄρ' ἐκλείπει ἢ σελήνη ἢ αὖξεται; εἰ γὰρ ἔστι τίς ἢ μὴ ἔστι τίς, ἐν τοῖς τοιοῦτοις ζητοῦμεν ἀπλῶς δ', εἰ ἔστιν ἢ μὴ σελήνη ἢ νύξ. *Ph.* 2.1 193b26–29, see above on ch. 20. **Cicero** *Ac.* 2.123, habitari ait Xenophanes in luna, eamque esse terram multarum urbium et montium; portenta videntur, sed tamen nec ille qui dixit iurare possit ita se rem habere neque ego non ita. **Philo** *Somn.* 1.145, λέγεται γοῦν ὅτι σελήνη

πίλημα μὲν ἄκρατον αἰθέρος οὐκ ἔστιν, ὥς ἕκαστος τῶν ἄλλων ἀστέρων, κρᾶμα δὲ ἔκ τε αἰθερώδους οὐσίας καὶ ἀερώδους. **Plutarch** *De facie* 921E, οὐκ ἐθελήσει δέ ... τὴν σελήνην ἐμβριθεῖς ὑποθέσθαι σῶμα καὶ στέρεον ἡμῖν ὁ Κλέαρχος ἄλλ' ἄστρον αἰθέριον καὶ φωσφόρον... 922B, εἰ οὖν ἡ σελήνη πῦρ ἐστὶ, πόθεν αὐτῇ τοσοῦτος ἐγγέγονεν ἀήρ; 935B–C, (γ)ῆ τις (ὀλυμπία καὶ) ἱερὰ πρὸς ἀνθρώπων νομιζομένη μᾶλλον ἢ πῦρ θολερὸν ὥσπερ οἱ Στωικοὶ λέγουσι καὶ τρυγῶδες. 936E, οἱ δὲ σῶμα μὴ λεπτόν μηδὲ λεῖον ... ἀποφαίνοντες τὴν σελήνην ἄλλ' ἐμβριθεῖς καὶ γεῶδες ... 943E, ἐφορῶσι δὲ πρῶτον μὲν αὐτῆς σελήνης τὸ μέγεθος καὶ τὸ κάλλος καὶ τὴν φύσιν οὐχ ἀπλὴν οὐδ' ἄμικτον ἄλλ' οἷον ἄστρον σύγκραμα καὶ γῆς οὖσαν ... ταῦτα δὲ καὶ Ξενοκράτης ἔοικεν ἐννοῆσαι θεῖον τινὶ λογισμῷ τὴν ἀρχὴν λαβὼν παρὰ Πλάτωνος. Πλάτων γάρ ἐστιν ὁ καὶ τῶν ἀστέρων ἕκαστον ἐκ γῆς καὶ πυρὸς συνηρμόσθαι δια τῶν (δυεῖν) μεταξὺ φύσεων ἀναλογίᾳ δεθεισῶν ἀποφηνάμενος ... ὁ δὲ Ξενοκράτης τὰ μὲν ἄστρα καὶ τὸν ἥλιον ἐκ πυρὸς φησι καὶ τοῦ πρώτου πυκνοῦ συγκεῖσθαι τὴν δὲ σελήνην ἐκ τοῦ δευτέρου πυκνοῦ καὶ τοῦ ἰδίου ἀέρος ... 945D, μικτόν δὲ καὶ μέσον ἡ ψυχὴ καθάπερ ἡ σελήνη τῶν ἄνω καὶ κάτω σύμμιγμα καὶ μετακράσμα ὑπὸ τοῦ θεοῦ γέγονε... **Lucian** *Icar.* 20 (the moon speaking), πολλὰ καὶ δεινὰ παρὰ τῶν φιλοσόφων ἀκούουσα, οἷς οὐδὲν ἔτερόν ἐστιν ἔργον ἢ τὰμὰ πολυπραγμονεῖν, τίς εἰμι καὶ πηλίκῃ, καὶ δι' ἣντινα αἰτίαν διχότομος ἢ ἀμφίκυρτος γίνομαι. **Proclus** *in Ti.* 2.48.15, οἱ δὲ Πυθαγόρειοι ἔλεγον ἐν τῷ οὐρανῷ θεωρεῖσθαι τὰ στοιχεῖα διχῶς, ἄλλως μὲν πρὸ ἡλίου, ἄλλως δὲ μετὰ ἥλιον. γῆ μὲν γὰρ αἰθερία ἢ σελήνη· τοῦτο μὲν οὖν καὶ ὁ θεολόγος [i.e. Orpheus] εἶρηκε σαφῶς· “μήσατό τ' ἄλλην γαῖαν ἀπείριτον, ἦν τε σελήνην | ἀθάνατοι κληῖζουσιν, ἐπιχθόνιοι δὲ τε μήνην, | ἡ πόλλ' οὐρὲ ἔχει, πόλλ' ἄστεα, πολλὰ μέλεθρα”; cf. 2.282.11, 3.142.15, 172.19. **Macrobius** *Comm. in somn. Scip.* 1.19.10–12, ... denique quia totius mundi ima pars terra est, aetheris autem ima pars luna est, lunam quoque terram sed aetheriam vocaverunt ... luna speculi instar lumen quo illustratur emittit, quia illa aeris et aquae, quae per se concreta et densa sunt, faex [i.e. dregs, cf. Stoic doxa at Plu. *De facie* 935B cited above (not in *SVF*)] habetur et idea extrema vastitate densata est, nec ultra superficiem quavis luce penetratur; haec licet et ipsa finis sit, sed liquidissimae lucis et ignis aetherii, ideo quamvis densius corpus sit quam cetera caelestia, multo tamen terreno purius ...

Aëtius *Placita* 2.26

Περὶ μεγέθους σελήνης

WITNESSES

Ps.Plutarch 2.26, Eusebius 15.27, ps.Galen 67a, Qusṭā Ibn Lūqā 2.26  
Stobaeus 1.26.1bhk  
Theodoret 4.23

ANALYSIS

1. As our doxographer now pursues the questions that can be asked about the moon, he repeats the sequence that he used for the sun (cf. 2.21) and has the question of size follow that of substance.

2. P records only two doxai:

κζ'. περὶ μεγέθους σελήνης

P2.26.1 οἱ Στωικοὶ μείζονα τῆς γῆς ἀποφαίνονται ὥς καὶ τὸν ἥλιον.

P2.26.2 Παρμενίδης ἴσῃν τῷ ἡλίῳ, καὶ ἀπ' αὐτοῦ φωτίζεσθαι.

There are no significant variants in the tradition of P.

3. Among S's coalesced doxai there are three that can be assigned to this chapter:

1.26 title Περὶ σελήνης οὐσίας καὶ μεγέθους καὶ σχήματος

1.26.1b

S1

Παρμενίδης

—ἴσῃν δὲ τῷ ἡλίῳ, καὶ γὰρ ἀπ' αὐτοῦ φωτίζεσθαι.

1.26.1h

S2

Ἀριστοτέλης

—ἐλάττονα δὲ τῆς γῆς εἶναι τῷ μεγέθει.

1.26.1k

S3

Ποσειδώνιος δὲ καὶ οἱ πλείστοι τῶν Στωικῶν

—μείζονα δὲ τῆς γῆς, ὥς καὶ τὸν ἥλιον.

The two doxai from P are easily recognized. Because of the process of coalescence the Stoic doxa falls under the expanded name-label from

2.25.<sup>447</sup> The Aristotelian doxa is additional. Due to the method used by S, we cannot use his evidence to determine the order of the doxai.

4. T continues his paraphrase on the moon with his usual brevity:

*GAC* 4.23, 106.12–14

- |                |  |
|----------------|--|
| T <sub>1</sub> | καὶ οἱ μὲν μείζονα τῆς γῆς ἀποφαίνονται, |
| T <sub>2</sub> | οἱ δὲ ἰσόμετρον,                         |
| T <sub>3</sub> | οἱ δὲ γε ἐλάττωνα,                       |
| T <sub>4</sub> | ἄλλοι δὲ σπιθαμῆς ἔχειν διάμετρον.       |

He appears to preserve four doxai, all recorded anonymously. His evidence diverges from that of P and S at two significant points. In T<sub>2</sub> the moon is regarded as the same size as the earth, not the sun as in PS. T<sub>4</sub> is a new doxa not found in P or S. The question of the moon's size is not dealt with by Achilles or any of the Aratean scholia.

5. We thus appear to have a short chapter with at least four doxai. At first glance their order would seem to be reflected in T's text, even if the name-labels are missing. In spite of its brevity and apparent simplicity, however, this chapter contains two real difficulties.

(a) It seems at first that A will simply follow the method of his chapter on the sun's size, giving the various possibilities in terms of the size of the earth. The view attributed to the Stoics that the moon is greater than the earth—of which the equivalent was surprisingly deleted in 2.21\*—begins the sequence. The statement that not only the moon but also the sun is larger than the earth compensates for the earlier omission. It finds its opposite in the Aristotelian view, in which the moon is smaller than the earth. The third lemma, found in both P and S, is most puzzling because it compares the moon not with the earth but with the sun, to which it is equal in size. One is inclined to think—with Theodoret, as we shall see—that a mistake has been made, i.e. that it should be equal to the *earth* in size (cf. 2.21.1\*). The additional information that the moon is illuminated by the sun does not belong in this chapter, but merely anticipates what will be dealt with in ¶28.<sup>448</sup>

<sup>447</sup> It is obvious that the name-label Posidonius should not be retained in this chapter. S simply coalesces the Stoic doxai together. Kidd (1988) 472 fails to take the method of the diverse sources sufficiently into account. His F122 should end at the word ἀέρος.

<sup>448</sup> It could be taken as furnishing evidence that originally the Placita divided up an earlier account of Parmenides' views which presented his views on the moon in a single cluster.

The straightforward diaeresis that one would expect—greater, equal, lesser—is thus spoilt. It is very tempting to emend, but since E, P and S all agree, it would be unjustified to let systematics prevail and follow T, e.g. Παρμενίδης ἴσην <τῇ γῇ καὶ> τῷ ἡλίῳ.<sup>449</sup>

(b) As we have seen on a number of occasions already, T instinctively understands the method of constructing διαφωνία, so no doubt he creatively adapts his text when he lists the tenets μείζονα τῆς γῆς, ἰσόμετρον, ἐλάττωνα. What then about his additional doxa that the moon is the width of a span? This would seem to correspond neatly with the minimum size given for the sun in the Epicurean view (a span being somewhat smaller than a foot; the apparent size of the moon is about the same as the sun, cf. Cleomedes *Cael.* 2.3 172.25). To our knowledge such a small (and recondite) measurement for the moon is found nowhere else (at D.L. 10.91 Epicurus merely says that the sun and other stars are the size they appear, but Cleomedes *Cael.* 2.3 polemicizes against the view that the moon τηλικαύτη ἐστὶν ἡλικὴ φαίνεται, i.e. the same formula used for the sun).<sup>450</sup> On the other hand, there are also grounds for doubt. We have noted how free T is with his text. He may have easily added this detail in order to complete the parallelism with the size of the sun (4.22 106.6, the doxa of Heraclitus). Moreover, it is rather suspicious that the σπιθαμή is a biblical measure, used on seven occasions in the LXX, most notably at Is. 40:12, τίς ἐμέτρησε ... τὸν οὐρανὸν σπιθαμῇ (which T quotes on at least half a dozen occasions). Diels *DG* 46 argued that this doxa ‘enriched the *Placita* with a fresh item’, but, true to his method, did not include it in his text. Mindful of the strictures of Michael Frede,<sup>451</sup> we include it, but with some misgivings. Because the doxa is recorded nowhere else, it would certainly be rash to attribute it to a particular philosopher (e.g. Heraclitus). If it were the case that S had omitted the lemma, this would support the supposition that it was anonymous in A as well (cf. the fate of 2.24.6\*). T’s formulation with ἄλλοι can be retained; it also occurs in the following chapter (2.27.5\*).

<sup>449</sup> In the doxography on Parmenides at D.L. 8.77 it is stated that the sun was larger than the moon. Note also that in the Parmenidean doxa at 2.20.15\* the sun and moon are also discussed together.

<sup>450</sup> Unless one follows Usener and Marcovich in adding <καὶ σελήνης> to D.L.’s text.

<sup>451</sup> Frede (1999) 147–149 could have cited this example when he argues that more material can be drawn from the evidence of T than we allowed for in our discussion in Vol. I:286–288.



6. The above uncertainties make their presence felt when we attempt to determine the chapter's structure. If the order in T is retained and the inclusion of T<sub>4</sub> is accepted, we obtain a flawed type C diaeresis. It is parallel to the diaeresis in 2.21, but as noted above is marred by the comparison with the sun (instead of the earth) in P<sub>2</sub> = S<sub>1</sub>. It is possible that the text became corrupt early in its transmission. It is equally possible that A has not felt the need to adhere to a strict diaeretic scheme in this case. On the other hand, if T<sub>4</sub> is not included, other possibilities emerge, since as we recall the order of the doxai in S is uncertain. A may have started with a type A diaeresis between the Stoic and the Aristotelian doxa, and then added the doxa of Parmenides as a different kind of comparison. There is no way for us to decide between these possibilities. In the diagram below we give two alternatives.

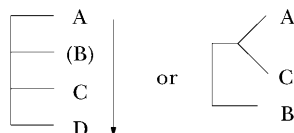
7. The doxographical parallels are far fewer than for the question of the sun's size (as we shall see, other aspects of the moon were considered more interesting). We observe that, as in ¶21, A declines to include any scientific measurements attributed to the μαθηματικοί; contrast Cicero *N.D.* 2.103,<sup>452</sup> Plu. *De facie* 923A–B, 932A–B. This is not only due to the fact that doxography has little use for exact figures. A considerable body of opinion continued to hold to the position that the moon was larger than the earth, in spite of solid scientific research that had proved the contrary.<sup>453</sup> Plutarch's report of a doxa of Anaxagoras that the moon was the size of the Peloponnese (text below) is of interest as a parallel to his view on the size of the sun at 2.21.3\*. It is the kind of doxa that may well have been included in the earlier doxographical tradition (it is recorded nowhere else and is missing in DK).

<sup>452</sup> Where note the word *ostendunt*, i.e. ἀποδείκνυσιν, also used by Plutarch at 932B of Aristarchus. It is indeed instructive to compare the rigorous deductive method of this scientist in his extant treatise *Περὶ μεγέθων καὶ ἀποστημάτων ἡλίου καὶ σελήνης*, edited by Heath (1913) 352–411; cf. our comments above at n. 389. The tradition about Thales being the first to measure the moon's size (cf. D.L. 1.24) is also ignored.

<sup>453</sup> Cf. Préaux (1973) 285–286, citing *Pap. Louvr.* 1.447, 459, and Pliny *NH* 2.49. On ancient philosophical and scientific views on the moon's size see further Gundel (1935) 84–86.

STRUCTURE (see above sect. 6)

- A larger than the earth (= §1)  
 B same size as the sun (= §2)  
 C smaller than the earth (= §3)  
 D no bigger than a span (= §4)



RECONSTRUCTED TEXT

κζ'. Περί μεγέθους σελήνης

- 1 οἱ Στωικοὶ μείζονα τῆς γῆς<sup>1</sup> ἀποφαίνονται ὥς καὶ τὸν ἥλιον.  
 2 Παρμενίδης ἴσην<sup>2</sup> τῷ ἡλίῳ, καὶ γὰρ<sup>3</sup> ἀπ' αὐτοῦ φωτίζεται.  
 3 Ἀριστοτέλης ἐλάττονα τῆς γῆς,  
 4 ἄλλοι σπιθαμῆς ἔχειν διάμετρον<sup>4</sup>.

- 1 τῆς γῆς intercidit in E  
 2 PG, ἴσον E  
 3 SE, om. P  
 4 ex T, sed dubium

§1 *SVF* 2.666; §2 28A42 DK; §3 T19 Gigon; §4—

26. On the size of the moon

- 1 The Stoics (declare that the moon is) larger than the earth, as the sun is as well.  
 2 Parmenides (declares that it is) equal to the sun (in size), and indeed that it is illuminated by it.  
 3 Aristotle (declares that it is) smaller (in size) than the earth.  
 4 But others (declare that it) has the diameter of a span.

DIALECTICAL-DOXOGRAPHIC PARALLELS

**Eudemus** on Anaximander and the later astronomers, see above ch. 21. **Stoics** *ap.* D.L. 7.132, see above ch. 21. **Aristarchus**, see above ch. 21. **Cicero** *N.D.* 2.103, luna autem, quae est, ut ostendunt mathematici, maior quam dimidia pars terrae ... **Plutarch** *De facie* 923A, πολλῶ μείζονα [sc. τὴν γῆν] τῆς σελήνης οὖσαν ὥς ἐν τοῖς ἐκλειπτικοῖς πάθεσιν οἱ μαθηματικοὶ καὶ ταῖς διὰ τοῦ σκιάσματος παρόδοις τῇ ἐποχῇ τὸ μέγεθος ἀναμετροῦσιν; 932A–B, ἀλλ' Αἰγυπτῖους μὲν ἐβδομηκοστούδον οἶμαι φάναι μόνον εἶναι τὴν σελήνην, Ἀναξαγόραν δ' ὅση Πελοπόννησος. Ἀρίσταρχος δὲ (τὴν διάμετρον τῆς γῆς πρὸς) τὴν διάμετρον τῆς σελήνης λόγον ἔχουσαν ἀποδείκνυσιν, ὃς ἐλάττων μὲν ἢ ἐξήκοντα πρὸς δεκαεννέα, μείζων δ' ἢ ὥς ἑκατὸν ὀκτὼ πρὸς τεσσαράκοντα τριῖ ἐστίν; cf. 935E, 943E (cited in ch. 25). **Lucian** *Icar.* 20, see above ch. 25. **Cleomedes** *Cael.* 2.3.69 Todd, τὴν δὲ σελήνην σμικροτέραν τῆς γῆς φασιν οἱ ἀστρολόγοι εἶναι ... εἰ δὲ

γε ἴση ἦν ἡ σελήνη ἢ μείζων τῆς γῆς, πολὺ μέρος ἂν αὐτῆς κατεσκίαζεν ἐν ταῖς γινομέναις αὐτῆς ὑπὸ τὸν ἥλιον ὑποδρομαῖς ... φαίνεται δ' ἡ σελήνη μεγάλη καὶ τῷ ἡλίῳ ἰσομεγέθης καὶ τῶν ἀστέρων μείζων, ἐλάττων κατὰ τὴν ἀλήθειαν αὐτῶν οὕσα ...; cf. 2.1.353. **Galen** *De curandi ratione* 11 256.11 Kuhn (on the use of reason), ὥστε ἔρχεσθαι ποτε τὴν δεῖξιν αὐτῶν ἄχρι τῶν τοῖς ιδιώταις ἀπίστων, ἡλίου καὶ σελήνης καὶ γῆς, οὐ μόνον τῶν μεγεθῶν, ἀλλὰ καὶ τῶν διαστημάτων τῆς γνώσεως ...; *Inst. log.* 12.3 27.8 Kalbfleisch, μέγεθος δὲ καὶ ἡλίου (καὶ) σελήνης καὶ τῶν κατ' αὐτοὺς ἀποστημάτων ἐζήτηται καὶ δέδεικται τοῖς ἀστρονόμοις ... **Basil** in *Hex.* 6.11 109.3–11 Amand de Mendieta–Rudberg, καίτοι γε οὐδενὸς ἦψατο σχεδὸν τῶν καιρίων ὁ λόγος· πολλὰ γὰρ περὶ μεγεθῶν καὶ ἀποστημάτων ἡλίου καὶ σελήνης ἐστὶν ἐξευρεῖν τοῖς λογισμοῖς, τὸν μὴ παρέργως τὰς ἐνεργείας αὐτῶν καὶ τὰς δυνάμεις ἐπεσκεμμένον. εὐγνωμόνως οὖν δεῖ κατηγορεῖν ἡμᾶς τῆς ἑαυτῶν ἀσθενείας, ἵνα μὴ τῷ ἡμετέρῳ λόγῳ μετρητῇ τῶν δημιουργημάτων τὰ μέγιστα, ἀλλὰ ἐξ ὀλίγων τῶν εἰρημένων παρ' ἑαυτοῖς ἀναλογίζεσθαι, πόσα τινὰ ἐστὶ καὶ πηλίκα τὰ παρεθέντα. μὴ τοίνυν μηδὲ σελήνην ὀφθαλμῷ μετρήσης, ἀλλὰ λογισμῷ, ὃς πολλῷ τῶν ὀφθαλμῶν ἀκριβέστερός ἐστι πρὸς ἀληθείας εὑρεσιν (cf. also **Johannes Philoponus** *Opif.* 194.20). **Simplicius** *Comm. in Epicteti ench.* 34.11 Hadot, αἱ δὲ ἴδιαι ἐκάστου ἔννοιαι, καὶ διαμαρτάνουσι πολλάκις· αἱ μὲν, ἐξ αἰσθήσεως λαμβανόμεναι ἀπατωμένης, ὥς, τὸ τὴν σελήνην ἴσην εἶναι τῷ μεγέθει τοῦ ἡλίου· ἢ ἀπὸ ὀρέξεως ἀλόγου, ὥς ἡ λέγουσα, πᾶσαν ἡδονὴν ἀγαθὸν εἶναι· ἢ ἀπὸ λόγου ἀβασανίστου, ὥς ἡ λέγουσα, δύο ἀρχὰς εἶναι τῶν πάντων, καὶ ἡ τὴν ψυχὴν σῶμα νομίζουσα. **Isidore of Seville** *De rer. nat.* 16.

Aëtius *Placita* 2.27

Περὶ σχήματος σελήνης

WITNESSES

Ps.Plutarch 2.27, Eusebius 15.28, ps.Galen 68, Qusṭā Ibn Lūqā 2.27  
Stobaeus 1.26.1cfik  
Cf. Theodore 4.24, Achilles 21

ANALYSIS

1. This chapter is the fourth and final one in Book II devoted to the question of shape; cf. 2.2 (cosmos), 2.14 (stars), 2.22 (sun). There is still a chapter on the earth's shape to come (P 3.10), but that is in Book III. Just as was the case for the previous chapter (2.26), we have a compact and seemingly straightforward chapter that nevertheless poses some awkward problems because of the nature of our evidence.

2. P this time records four doxai:

κζ'. Περὶ σχήματος σελήνης

- P2.27.1 οἱ Στωικοὶ σφαιροειδῆ εἶναι ὡς τὸν ἥλιον.  
P2.27.2 Ἐμπεδοκλῆς δισκοειδῆ.  
P2.27.3 Ἡράκλειτος σκαφοειδῆ.  
P2.27.4 ἄλλοι κυλινδροειδῆ.

These minimalist doxai follow the pattern of the earlier chapters on shape in Book II, where in each case they are four in number. Here, however, the other witnesses in P's tradition give significant variants. Both E and G reverse the order of the second and third doxa (we cannot check against Q since he preserves the title only). Moreover in G a long section follows the final doxa in which the shape of the phases of the moon is explained (68, 627.22–29 Diels):

σχηματίζεται δὲ ἡ σελήνη ἑπταχῶς· ὅτε τίκεται, δοκεῖ φαίνεσθαι μηνοειδῆς, (εἴτα) διχότομος, εἴτ' ἀμφίκυρτος, εἴτα πανσέληνος, εἴτα πάλιν ἐπαναχωροῦσα αὖθις γίνεται ἀμφίκυρτος, εἴτα διχότομος καὶ τὸ ὕστερον μηνοειδῆς, εἴτ' ἀφανὴς κατὰ τὴν καινὴν. πλείστος γίνεται περὶ αὐτῆς λόγος. λέγεται τοῦτον σχηματίζεσθαι τὸν τρόπον σκιαζούσης ἐκάστοτε τῆς γῆς πρῶτον μὲν κατὰ τὸ μόριον ἑαυτῆς, ποτὲ δὲ κατὰ τὸ παντελὲς ὑπορρεούσης τῆς σελήνης εἰς τὸ κοῖλον (τὸν κῶνον conj. Diels) τῆς γῆς.

We return to this section, which Diels did not include in his reconstruction, below.

3. The evidence in S again has to be disentangled from his coalescence of the first three chapters on the moon:

1.26 title	Περὶ σελήνης οὐσίας καὶ μεγέθους καὶ σχήματος
1.26.1c	
S <sub>1</sub>	Ἡράκλειτος σκαφοειδῇ τῷ σχήματι.
1.26.1f	
S <sub>2</sub>	Ἐμπεδοκλῆς —δισκοειδῇ δὲ τῷ σχήματι.
S <sub>3</sub>	τινὲς δὲ κυλινδροειδῇ.
1.26.1i	
S <sub>4</sub>	Κλεάνθης —πιλοειδῇ δὲ τῷ σχήματι.
1.26.1k	
S <sub>5</sub>	Ποσειδώνιος δὲ καὶ οἱ πλεῖστοι τῶν Στωικῶν —σφαιροειδῇ δὲ τῷ σχήματι·
S <sub>6</sub>	σχηματίζεσθαι δὲ αὐτὴν πολλαχῶς, καὶ γὰρ πανσέληνον γινομένην καὶ διχότομον καὶ ἀμφίκυρτον καὶ μηνοειδῇ.

This evidence calls forth four comments.

- (1) For Heraclitus S left out his view on the moon's οὐσία (cf. above on 2.25), but does include his view on its shape. The words τῷ σχήματι were probably added by S himself.
- (2) The views of Empedocles and the anonymous view are coupled together, which suggests that they were linked in A, i.e. supporting the order in EG against P.
- (3) The doxa of Cleanthes is problematic. In our analysis of 2.25 we decided that the Cleanthean lemmata in S most likely come from A (see sect. 3). The second of these, that the moon is cap-like in shape, must then derive from this chapter.<sup>454</sup> The doxa is thus parallel to the idiosyncratic view on the stars' shape at 2.14.2\*. A further difficulty is that we do not know what its place in the chapter was. It is possible that it was included as a minority position within the Stoic school (as in ¶14 and ¶25). It could also have a place in the list of odd non-spherical views. Because of the complications of the extended Stoic lemma here, we opt for the latter position.
- (4) As in ¶26 there is no need to retain the extended Stoic name-label: the Stoics represent the majority view on the question, which is placed first. We note that here (unlike in ¶26) S does not include the parenthetical remark drawing the analogy with the sun. It is more likely that he left it out than that it is an addition of P, so it should be retained. He then

<sup>454</sup> But the Chrysippean view on the sun's shape at 26.11 we assigned to AD.

adds a brief excerpt on the monthly shapes of the moon, which is quite similar, though shorter, than the additional section in G (but the order is reversed, starting with the full spherical moon). It is to be agreed with Diels that this section should be included in A, where it has a logical place (contrary to the case of the sun, the moon has more than one kind of shape) following on from the doxa of its sphericity.<sup>455</sup> But what should we do about the longer doxa in G? Diels at *DG* 15 plausibly argued that G derives his extract not from P but from elsewhere, but did not observe the striking similarity to the section in S. It is hard to see, however, how the two extracts could have the same provenance.<sup>456</sup> As Diels rightly pointed out, this kind of material is very common, and G could have taken it from anywhere. For our reconstruction it is not of great importance.

4. The remaining evidence is scanty. T only gives a general reference to the subject without any doxai (4.24, 106.14–17):

καὶ τί δεῖ λέγειν, ὅσα ἐκεῖνοι σχημάτων πέρι καὶ ἐκλείψεων καὶ διαστημάτων μυθολογοῦσιν ...

The plural might just be an indication that A spoke not only about the moon's actual shape, but also about the apparent shapes during its phases, as in the additional doxa found in S. The section in Ach ch. 21 on the moon is also very short:

*Isagoge* 21, 49.8–9 Maass ~ 30.12–13 Di Maria

Ach1 σχῆμα δὲ αὐτῆς (sc. σελήνης) οἱ μὲν σφαιροειδές,  
Ach2 οἱ δὲ δισκοειδές.

The doxai of the Stoics and Empedocles are easily recognized. Ach here uses exactly the same method as A, but as in the case of the moon's substance (see 2.25) he is even briefer. In addition at 49.14–24 Maas ~ 30.17–25 Di Maria he includes a section on the phases of the moon which differs from G and is a little more detailed.<sup>457</sup> The other Aratean scholia do not discuss the moon's shape.

<sup>455</sup> But it is certainly not impossible that the source was AD.

<sup>456</sup> Since G did not have access to A (but did have access to the doxographical tradition anterior to A; cf. our remarks on G 16–24 in Vol. I:144) and S did not have access to PG (the possibility of contamination is not relevant here, cf. Vol. I:267–269).

<sup>457</sup> There are also two anonymous doxai on the moon's changing shapes in 49.25–50.13 Maass ~ 31.1–19 Di Maria. The latter's comparison with a mirror recalls the Pythagorean doxa in 2.25.15\* and the description of Empedocles' theory in Philo *Prov.* 2.70. But resemblance to A is not close.

5. A begins with the Stoic view, which corresponds to the generally held opinion in Hellenistic and later times.<sup>458</sup> It is striking that in all five chapters on shape the Stoics are chosen to represent this position and in all cases except 2.22 the doxa is placed first.<sup>459</sup> The following doxa, which can also be seen as an addition to the first, then notes that the phases of the moon also result in a diversity of shapes, the implication being that these are dependent on its spherical shape. The remaining four doxai are, it seems, grouped together in a type C diaeresis as all involving variations on circular shape: bowl-like, disc-like, cap-like, cylindrical (i.e. a disc in three dimensions). The order, as we noted above, is contested. The sequence Heraclitus–Empedocles–anonymi in EG is not only supported by S; it also presents a more logical sequence (cf. a similar sequence is found in reverse in 2.22). The final anonymous view seems rather odd, but can be at least partly explained as a theoretical possibility indicated by the segment of a circle drawn on the sun when it is eclipsed by the moon. A cylindrical shape is implied for the earth in P 3.10.2. We also cannot determine the position of the Cleanthean doxa with certainty.<sup>460</sup> The sequence bowl–disk–cap–cylinder might seem the most logical, but it is risky to separate the conjoined doxai in S (supported by EG). It is of course very strange that such a view is attributed to Cleanthes, but we will make a suggestion as to how it happened below.

The present chapter can thus be interpreted either as a type C diaeresis (5 different shapes) or a type A diaeresis (spherical versus other circular shapes), with one of the arms containing a further type C diaeresis. As we shall see in the following section the second interpretation is supported by parallels elsewhere. It is also found in Achilles, who gives only an anonymous opposition between spherical and disc-like, i.e. the bare outline of the type A diaeresis in A. It is noteworthy that three different elements in the tradition include a section on the shapes of the phases of the moon (SGAch). This suggests, but does not necessitate, a common origin in the anterior doxographical tradition.

<sup>458</sup> It is so much taken for granted that Cicero does not even bother to mention it at *N.D.* 2.103.

<sup>459</sup> In 3.10 the name-label is ‘Thales and the Stoics and their successors’.

<sup>460</sup> Of course even the place of the doxa in the chapter is not certain; Diels attributed it to AD, but in our analysis of S’s lemma in ¶25 we retained it for A.

6. From the doxographical-dialectical parallels it emerges that this question too was seen as a standard topic of inquiry, although not always clearly enunciated. Quintilian cites it as a *quaestio generalis* and gives three options: spherical or flat or pointed.<sup>461</sup> Lactantius gives the alternatives of spherical or concave (cf. perhaps the doxa of Heraclitus). There seems little doubt that, as in the similar chapter on the shape of the earth (3.10), the main diaeresis is between spherical and other shapes.<sup>462</sup> Texts referring to non-spherical views on the moon's shape are quite rare (an exception is found in an unusual context in Plutarch, see the text below). Clearly it had long ceased to be a scientific option. On the other hand, there are a number of interesting texts in which it is argued that if the moon were not spherical, it would not be possible to explain the visible evidence of its phases. Aristotle gives this argument in his *De Caelo* (text below), but does not actually give any alternative shapes (some are supplied by Simplicius in his Commentary, but not the ones in this chapter). Even more interesting is the Parisian papyrus, which mentions the alternatives of being *δισκοειδής* and *σφαφοειδής*, i.e. the doxai of Empedocles and Heraclitus in the present chapter.<sup>463</sup> This is a good example of a dialectical procedure. It is quite well possible that as the result of such an argument alternative shapes were able to enter the doxographical tradition even if they were never actually held by a philosopher, e.g. in the case of the Cleanthean view or the anonymous view in this chapter. A fine parallel is found in the discussions on the shape of the earth, where non-spherical shapes were taken more seriously in the tradition. At least six shapes are cited in various texts (flat, concave, cube, pyramid, cone, cylinder).<sup>464</sup> These texts combine scientific and dialectical argument in a tradition that goes back to Aris-

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<sup>461</sup> The third option is strange, but does remind us of the doxa that the moon is cap-shaped!

<sup>462</sup> Cf. the discussion at Mansfeld (1992a) 104–106, who emphasizes the main division given by Aristotle in *Cael.* 2.13 293b34. See also Part I sect. 9 at n. 241.

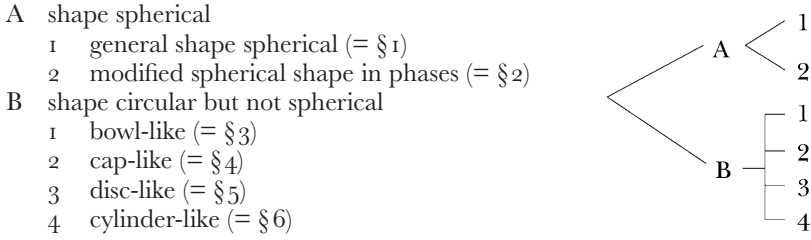
<sup>463</sup> The papyrus contains an *Ars astronomica* which it attributes by means of an acrostic poem to Eudoxus. The treatise is universally regarded as spurious and is not taken up in Lasserre (1966). We cite below the edition of Blass (1887). There is no doxography in the treatise except in the final columns (22–23), where it attributes various calendrical measurements to Eudoxus, Democritus, Callipus etc.

<sup>464</sup> E.g. Cleomedes *Cael.* 1.5 *passim*, Ptolemy *Syn. Math.* 1.4, and cf. the texts on the shape of the cosmos cited above on 2.2. The example of the cube (from Plato *Ti.* 55c3) shows that there is the usual confusion between cosmic region and element; cf. our remarks above in ch. 6–7.



tole.<sup>465</sup> It should be noted that this argument also links the actual shape of the moon as body to its apparent shape in its various phases, and so provides additional background for the combination of these two aspects of the subject in the present chapter as noted above in sect. 5.

STRUCTURE (see above sect. 5)



RECONSTRUCTED TEXT

κζ'. Περὶ σχήματος σελήνης

- 1 οἱ Στωικοὶ σφαιροειδῆ εἶναι<sup>1</sup> ὥς τὸν ἥλιον.
- 2 σχηματίζεσθαι δὲ αὐτὴν πολλαχῶς, καὶ γὰρ πανσέληνον γινομένην καὶ διχότομον καὶ ἀμφίκυρτον καὶ μηνοειδῆ.
- 3 Ἡράκλειτος σκαφοειδῆ<sup>2</sup>.
- 4 Κλεάνθης πιλοειδῆ<sup>3</sup>,
- 5 Ἐμπεδοκλῆς δισκοειδῆ<sup>4</sup>,
- 6 ἄλλοι<sup>5</sup> κυλινδροειδῆ<sup>6</sup>.

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- 1 εἶναι om. P<sup>2</sup>
  - 2 τῷ σχήματι add S
  - 3 δὲ τῷ σχήματι add S
  - 4 δὲ τῷ σχήματι add S
  - 5 δέ add S
  - 6 multa de septem lunae formis addidit G; vide supra

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§1–2 *SVF* 2.667; §3 22A12 DK; §4 *SVF* 1.506; §5 31A60 DK; §6—

<sup>465</sup> Goulet (1980) 199 remarks in a note *ad loc.* that ‘le paragraphe sur les différentes formes de la terre proposées par les physiciens est moins doxographique (Aëtius III 10 ...) que théorique’. It is true that the names are left out. The procedure, however, is dialectical rather than theoretical. The link to positions attributed to philosophers in the doxographical tradition is by no means fanciful. See further the discussion by Mansfeld cited above in n. 462.

## 27. On the shape of the moon

- 1 The Stoics (declare that the moon) is ball-like, just like the sun.
- 2 And it is shaped in many different ways, for it becomes full-moon and half-moon and gibbous and moon-like (i.e. crescent-shaped).
- 3 Heraclitus (declares that it is) bowl-like.
- 4 Cleanthes (declares that it is) cap-like.
- 5 Empedocles (declares that it is) disc-like.
- 6 But others (declare that it is) cylinder-like.

## DIALECTICAL-DOXOGRAPHIC PARALLELS

**Aristotle** *Cael.* 2.11 291b18, ἡ δ' σελήνη δεικνύται διὰ τῶν περὶ τὴν ὄψιν ὅτι σφαιροειδής· οὐ γὰρ ἂν ἐγίνετο αὐξανομένη καὶ φθίνουσα τὰ μὲν πλείστα μηνοειδής ἢ ἀμφίκυρτος, ἅπαξ δὲ διχότομος. καὶ πάλιν διὰ τῶν ἀστρολογικῶν, ὅτι οὐκ ἂν ἦσαν αἱ τοῦ ἡλίου ἐκλείψεις μηνοειδεῖς. Cf. *APo.* 1.13 78b3, πάλιν ὡς τὴν σελήνην δεικνύουσιν ὅτι σφαιροειδής, διὰ τῶν αὐξήσεων—εἰ γὰρ τὸ αὐξανόμενον οὕτω σφαιροειδές, αὐξάνει δ' ἡ σελήνη, φανερόν ὅτι σφαιροειδής—οὕτω μὲν οὖν τοῦ ὅτι γέγονεν ὁ συλλογισμός, ἀνάπαλιν δὲ τεθέντος τοῦ μέσου τοῦ διότι ...; also *Ph.* 2.1 193b29, cited above ch. 20. **Vitruvius** 9.1–3, see on ch. 28. **Pliny** *NH* 2.41, sed omnium admirationem vincit novissimum sidus ... lunae. multifor mi haec ambage torsit ingenia contemplantium et proximum ignorari maxime sidus indignantium, crescens semper aut senescens, et modo curvata in cornua falcis, modo aequa portione divisa, modo sinuata in orbem ... **Cleomedes** *Cael.* 2.5.37–40, εἰ μὲν οὖν ἐπιτέδω τῷ σχήματι ἐκέχρητο (sc. ἡ σελήνη), εὐθέως ἂν ἅμα τῷ παρελθεῖν ἀπὸ συνόδου τὸν ἡλίον ἐπληροῦτο καὶ ἔμενεν ἂν μέχρι συνόδου πλήρης. νυνὶ δὲ σφαιρικὸν ἔχουσα τὸ σχῆμα οὕτω τὰς τῶν σχημάτων ιδέας ἀποτελεῖ. 2.5.87–91, οἱ μὲν οὖν παλαιοὶ τρία εἶναι περὶ τὴν σελήνην σχήματα ἔφασαν, τὸ μηνοειδές, τὸ διχότομον, τὸ πεπληρωμένον ... οἱ δὲ νεώτεροι προσέθεσαν τοῖς τρισὶ τὸ νῦν καλούμενον ἀμφίκυρτον ... **Papyrus Parisinus** I col. 12.1–9, ἡ σελήνη σφαιροειδής ἐστιν· εἰ μὲν γὰρ ἦν δισκοειδής ... εἰ δὲ ἔσται σκαφοειδής ... **Plutarch** *Quaest. Rom.* 288B (why do children wear amulets called bullae?), ἀλλ' ὅρα μὴ καὶ τοῦτο διὰ τὴν σελήνην φοροῦσι. τὸ γὰρ φαινόμενον σχῆμα τῆς σελήνης, ὅταν ἦ διχόμοιρος, οὐ σφαιροειδές ἀλλὰ φακοειδές ἐστὶ καὶ δισκοειδές, ὡς Ἐμπεδοκλῆς οἶεται, καὶ τὸ ὑποκείμενον. **Quintilian** *Inst. Or.* 7.2.6 (on *generales quaestiones*), quaeritur per coniecturam et qualitatem circa modum speciem numerum ... luna globosa an plena an acuta. **Lucian** *Icar.* 20, see ch. 25. **Lactantius** *Div. Inst.* 3.3.4 (example of *scientia* beyond human reach), nam causas naturalium rerum disquirere aut scire velle ... item luna globosa sit an concava. **Simplicius** in *Cael.* 479.8, εἰ οὖν ἡ σελήνη ἐκ τῶν ὀρωμένων αὐτῆς φωτισμῶν σφαιροειδής δεικνύται, δηλόν ὅτι καὶ τὰ ἄλλα εἴη ἂν σφαιροειδῆ. εἰ γὰρ μὴ σφαιροειδής ἦν, ἀλλὰ τυμπανοειδής, εἰ τύχοι, ἢ φακοειδής, οὐκ ἂν οἱ φωτισμοὶ τοιοῦτοι ἐγίνοντο ... **Schol. in Aristoph. Nubes** 157.12 Holwerda, ὁ γὰρ τῆς σελήνης κύκλος στρογγυλοειδής, καθάπερ καὶ τὰ ἔσοπτρα. καὶ φασι τοὺς περὶ τὰ τοιαῦτα δεινοὺς οὕτω κατάγειν τὴν θεόν.

Aëtius *Placita* 2.28

Περὶ φωτισμῶν σελήνης

WITNESSES

Ps.Plutarch 2.28, Eusebius 15.29, ps.Galen 69, Lydus *De mensibus* 3.12,  
Qusṭā Ibn Lūqā 2.28  
Stobaeus 1.26.2  
Cf. Philo *Somn.* 1.23, 53

ANALYSIS

1. Our doxographer moves on to the next subject of his sequence of chapters on the moon, the source of its light. Here and in the following three chapters, as noted above in ch. 25 sect. 3, we are in a privileged position. S abandons his scheme of coalescence. It was difficult enough to coalesce the five chapters on the sun. For the subject of the moon, however, there are no less than seven chapters in all. S recognizes that to join them all together is too much labour, and so, having coalesced the first three, he changes his method and, as it would seem, simply writes out the remaining four chapters, including even the chapter headings as subheadings.<sup>466</sup> The fact that P contains no material at all which is missing in S gives this supposition strong support. There remains the possibility that material from AD is admixed. As it happens, however, these chapters contain few references to the schools dealt with by AD.<sup>467</sup> In short, in these chapters no reconstruction needs to be done, only analysis. In the light of these altered circumstances we commence with the evidence furnished by S.

It should also be noted that this chapter contains various degrees of overlap, particularly in the use of name-labels, with the two succeeding chapters. We shall discuss this phenomenon in greater detail in ch. 29 sect. 5.

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<sup>466</sup> See our comments on his method in Vol. I:218. On S's titles and sub-titles see Mansfeld (2000b) 182–183. These appear in both mss., so are not likely to be contaminated from P, as a small number of headings in the Florentine ms. are; see Vol. I:267. Diels *DG* 68 notes S's procedure, but does not realize the importance of the evidence in showing how A went to work.

<sup>467</sup> There is only one problematic lemma in ¶29; see our analysis there.

## 2. The chapter as preserved by S contains seven doxai:

- 1.26.2      Περὶ δὲ φωτισμῶν αὐτῆς
- S1      Ἀναξίμανδρος, Ξενοφάνης, Βήρωσος ἴδιον αὐτὴν ἔχειν φῶς.
- S2      Ἀριστοτέλης ἴδιον μέν, ἀραιότερον δέ πως.
- S3      οἱ Στωικοὶ ἀμαυροφανές, ἀεροειδές γάρ.
- S4      Ἀντιφῶν ἰδιοφεγγὴ μὲν τὴν σελήνην, τὸ δ' ἀποκρυπτόμενον περὶ αὐτὴν ὑπὸ τῆς προσβολῆς τοῦ ἡλίου ἀμαυροῦσθαι, πεφυγκότος τοῦ ἰσχυροτέρου τὸ ἀσθενέστερον ἀμαυροῦν· ὃ δὴ συμβαίνειν καὶ περὶ τὰ ἄλλα ἄστρα.
- S5      Θαλῆς πρῶτος ἔφη ὑπὸ τοῦ ἡλίου φωτίζεσθαι.
- S6      Πυθαγόρας, Παρμενίδης, Ἐμπεδοκλῆς, Ἀναξαγόρας, Μητροδώρος ὁμοίως.
- S7      Ἡράκλειτος ταῦτόν πεπονθέναι τὴν τε σελήνην καὶ τὸν ἥλιον. σκαφοειδεῖς δὲ ὄντας τοῖς σχήμασι τοὺς ἀστέρας, δεχομένους τὰς ἀπὸ τῆς ὑγρᾶς ἀναθυμιάσεως αὐγὰς, φωτίζεσθαι πρὸς τὴν φαντασίαν, λαμπροτέρως μὲν τὸν ἥλιον, ἐν καθαρωτέρῳ γὰρ ἀέρι φέρεσθαι, τὴν δὲ σελήνην ἐν θολωτέρῳ καὶ διὰ τοῦτο ἀμαυροτέραν φαίνεσθαι.

The succession of doxai seems straightforward. As P will show, αὐτῆς in the title replaces σελήνης, and the connecting particle δέ is added by S as well. We note the penchant for multiple name-labels, particularly (as we shall see) for the main positions S1 and S5–6. We can compare A's procedure in 2.1, preserved by S but epitomized away by P.

## 3. For P the situation now changes dramatically. He is no longer a vital witness, but now stands on trial, as it were, since his every move can be checked through comparison with S. He retains four doxai:

- κη'. Περὶ φωτισμῶν σελήνης
- P2.28.1      Ἀναξίμανδρος ἴδιον αὐτὴν ἔχειν φῶς, ἀραιότερον δέ πως.
- P2.28.2      Ἀντιφῶν ἰδίῳ φέγγει λάμπει τὴν σελήνην, τὸ δ' ἀποκρυπτόμενον περὶ αὐτὴν ὑπὸ τῆς προσβολῆς τοῦ ἡλίου ἀμαυροῦσθαι, πεφυγκότος τοῦ ἰσχυροτέρου πυρὸς τὸ ἀσθενέστερον ἀμαυροῦν· ὃ δὴ συμβαίνειν καὶ περὶ τὰ ἄλλα ἄστρα.
- P2.28.3      Θαλῆς καὶ οἱ ἄπ' αὐτοῦ ὑπὸ τοῦ ἡλίου φωτίζεσθαι τὴν σελήνην.
- P2.28.4      Ἡράκλειτος τὸ αὐτὸ πεπονθέναι τὸν ἥλιον καὶ τὴν σελήνην· σκαφοειδεῖς γὰρ ὄντας τοῖς σχήμασι τοὺς ἀστέρας δεχομένους δὲ τὰς ἀπὸ τῆς ὑγρᾶς ἀναθυμιάσεως αὐγὰς φωτίζεσθαι πρὸς τὴν φαντασίαν, λαμπρότερον μὲν τὸν ἥλιον, ἐν καθαρωτέρῳ γὰρ ἀέρι φέρεσθαι, τὴν δὲ σελήνην ἐν θολωτέρῳ, διὰ τοῦτο καὶ ἀμαυροτέραν φαίνεσθαι.

The other witnesses, amplified by Lydus, yield no significant variants. G reduces the chapter to just two doxai, P1 and P3. He alone has the

singular in the title, no doubt yet another *Verschlimmbesserung*. But for all his faults G well understands the basic method of the *Placita*. His two doxai reproduce the diaphonia that lies at the heart of the chapter's structure.

P preserves the original title in A. His manipulations are quite transparent. It is important to note that he does not alter the order of the doxai he retains.

- (1) S<sub>1</sub> is conflated with S<sub>2</sub> attributed to Aristotle. This could be the result of a *parablepsis* that entered very early in the tradition (it is already present in E). It could also be due to P himself, who not without reason decided that there was very little difference between the doxai (i.e. if Aristotle's 'dimmer light' is taken to mean 'dimmer compared with the sun').
- (2) S<sub>3</sub> attributed to the Stoics is deleted, no doubt because it adds little (the comment on the airy nature repeats the doxa in ¶25). That the moon is ἀμαυρός is also affirmed in the doxai of Antiphon and Heraclitus.
- (3) Antiphon's doxa S<sub>4</sub> is retained entire. P writes ἰδίῳ φέγγει λάμπειν, S simply ἰδιοφεγγῇ. The adjective occurs only here, but seems very much a *vox doxographica*. Both the aim of extreme compression and the avoidance of verbs are characteristic of doxographical style. Moreover S is less motivated than P to make alterations. So we opt for S. The word πυρός in P, however, should be retained.<sup>468</sup>
- (4) For S<sub>5</sub>–6 P deletes the πρῶτος εὐρετής motif applied to Thales (cf. 2.24.1 on the sun's eclipse, P 4.2.1 on the soul). He also shortens the name-label to Θαλῆς καὶ οἱ ἀπ' αὐτοῦ (a frequent habit; cf. our discussion at Vol. I:192). The implication is that he regards Pythagoras Parmenides etc. as belonging to the succession of Thales.
- (5) The final Heraclitean lemma is completely copied out by P. The textual differences between P and S are minimal.

4. T does not make any use of this chapter. It is more surprising that Ach does not touch on its subject-matter. Two texts in Philo, however, give us insight into how this theme was dealt with in the anterior doxographical tradition:<sup>469</sup>

- (1) Philo *Somn.* 1.23, 3.209.23–26 C–W

τί δέ; σελήνην πότερον γνήσιον ἢ νόθον ἐπιφέρεται φέγγος ἡλιακαῖς ἐπιλαμπόμενον ἀκτίσιν ἢ καθ' αὐτό μὲν ἰδίᾳ τούτων οὐδέτερον, τὸ δ' ἐξ ἀμφοῖν ὡς ἂν ἐξ οἰκείου καὶ ἄλλοτριου πυρός κρᾶμα;

<sup>468</sup> Cf. cf. Plu. *De facie* 933D and Cherniss' comment *ad loc.*

<sup>469</sup> Both texts belong to the cache discussed above in ch. 11 sect. 4(3).

(2) Philo *Somn.* 1.53, 3.216.12–13 C–W

τί δέ περὶ φωτισμῶν σελήνης, εἰ νόθον ἔχει φέγγος, εἰ γνησίῳ μόνῳ χρῆται;

These two brief texts provide fascinating evidence. The latter contains our chapter's title<sup>470</sup> and a basic diaphonia: either the moon shines with bastard light, i.e. derived from elsewhere, or its illumination comes from within itself. The former starts with the same division, but then adds a third possibility which combines the two, i.e. that it has a mixture of its own and extraneous light. The difference between the two schemas is of course precisely that between a type A and a type B diaeresis.

5. Before we proceed to analyse A's chapter it is worth examining further the doxographical-dialectical parallels which for this chapter are unusually extensive. They confirm the importance of the structural schemas revealed by the Philonic texts cited above. The single diaphonia of Philo's second text can be seen in Epicurus, Lucretius, Cicero, Apuleius, and Augustine (texts below). The tripartite schema in Philo's first text is also found, albeit less clearly, in Plutarch's treatise on the moon's appearance (cf. esp. 928c κατὰ σύγκρασιν). We thus have two doxographical responses to this question, the one involving a diaeresis of the A type, the other of the B type. Most interestingly this alternation between two and three basic views also occurs in more scientific accounts. We find the former in Vitruvius, the latter in Cleomedes.<sup>471</sup> In both cases the view of Berosus is used for the 'own light' view. The attitudes to the doxai put forward also show interesting variation: Epicurus, Philo and Augustine are pessimistic about the possibility of reaching certainty on the question; Plutarch is more mildly sceptical; Cleomedes thinks argumentation points to one of the three views (the mixed non-reflective view). In authors such as Cicero *N.D.* 1.87, *Rep.* 6.17 and Pliny *NH* 2.43 it is simply assumed that the reflection theory is correct. Vitruvius neatly follows the procedure of the θέσις, i.e. *pro et contra dicere*, with the second position (Aristarchus, borrowed light) obviously the stronger, even if the author does not indicate this *expressis verbis*.

6. With this background in mind, the chapter's structure can now be tackled. The main διαφωνία is formed by S1 and S5, the two doxai standing under the leadership of the venerable Milesians Anaximander

<sup>470</sup> The same title is also mentioned at *Mut.* 67.

<sup>471</sup> On Cleomedes' third doxa, which he favours, see further below n. 474.

and Thales. This repeats what was found in ¶25 and once again the order is not chronological, the pupil preceding the teacher.<sup>472</sup> Berosus, who elsewhere is the chief representative of the ‘own light’ view, is placed after the two Presocratics Anaximander and Xenophanes. The phrase ἴδιον φῶς is obviously parallel to γνήσιον φέγγος in Philo (cf. Cleomedes *Cael.* 2.4.27). The extreme brevity of S2 and S3 make them difficult to interpret. We take the former basically to be a restatement of the first position, adding that the light is thinner (i.e. feebler).<sup>473</sup> The Stoic doxa in §3 is altogether too short. It too could be a restatement of the first position. More likely, however, it is related to the views presented anonymously at Philo *Somn.* 1.23 and attributed to the Stoics by Plu. *De facie* 928D, 933D (cf. also Cleomedes *Cael.* 2.4.21–32). This would mean that the dim, air-like appearance (cf. θολερώτερος at Plu. 933D) is due to a mixture of the sun’s light and the moon’s own light (or bodily nature).<sup>474</sup> This interpretation is more likely in our view, but there is no way that A’s reader could have been sure of what was meant. In the light of our parallels, it may be surmised that A’s desire for brevity has obscured the systematics of his *Vorlage*.

The view of Antiphon in §4 could also be regarded as a qualified version of the ‘own light’ position. It is better, however, to regard it as a ‘compromise’ view: the moon has its own light, but this light can be obscured by the presence of the more powerful light of the sun.<sup>475</sup>

<sup>472</sup> In the brief doxography on Anaximander’s thought at D.L. 2.1 we read τὴν τε σελήνην ψευδοφαῖν καὶ ἀπὸ ἡλίου φωτίζεσθαι. The style coheres well with A’s doxography, but not its contents! Kahn (1960) 61 states firmly that this view is ‘certainly incorrect’.

<sup>473</sup> But feebler than what? Since the doxa is not based on any statement in the Aristotelian corpus, one wonders whether it is an extrapolation from the doctrine of the fifth element, it being necessary to find some reason for the diminished intensity of the moon’s light.

<sup>474</sup> For the dispute on what the mixture exactly is, a mixture of two kinds of light or of sunlight and the moon’s own οὐσία, see Cherniss (1957) 123, Görgemanns (1970) 88, Goulet (1980) 221, Kidd (1988) 476ff., Bowen–Todd (2004) 137 n. 8. From Philo it is apparent that the doxographical tradition opted for the former and this fits in better with the structure of A’s chapter.

<sup>475</sup> τὸ ἀποκρυπτόμενον περὶ αὐτὴν must be taken to refer to the part of the moon concealed in its various phases; cf. 2.29.7\* τὰς μηνιαίους ἀποκρύψεις. It is a fine example of how the method of the *Placita* encourages the preservation of unusual views. Antiphon occurs only five times in A’s remains (also in P 1.22 on time (only in S), 2.20.4\* on the οὐσία of the sun, 2.29.3\* on the moon’s eclipses, in P 3.16 on the origin of the sea). These physical fragments have been very little discussed (they are not mentioned in the long survey in Narcy (1989)). If they are from Περὶ ἀληθείας, as is generally assumed, one wonders whether they were made in a proto-sceptical context.

We note that the verb ἀμυροῦν picks up the adjective ἀμυροφανές in the Stoic view. This increases the likelihood that these two doxai are to be taken together as compromise views. They reflect the type B diaeresis in the tradition, as well as supplying a transition from the one pole of the main division to the other.

The doxa of Thales that the moon's light is derivative represents the majority view in antiquity. The 'discovery' motif perhaps underlines this, as does the impressive list of five Presocratic names that follow. It is perhaps surprising that A does not use the striking term νόθος, which is prominent in the tradition (Lucretius, Philo, Lucian, Apuleius). In addition he does not pay specific attention to the doxa of Empedocles in which the moon's reflection of the sun's light is compared to what happens in a mirror (Philo, Plutarch).

The remaining puzzle is the final lemma, so far not yet discussed. The Heraclitean doxa might appear to belong to the first half of the diaphonia, since the moon is thought to derive its light in its bowl from the moist exhalation. The difference between this view and the view of Anaximander *cum suis* is that the light of the moon is only *apparently* less bright because the planet happens to be situated in murky air rather than the bright air in which the sun moves.<sup>476</sup> The 'epistemological' aspect is given strong emphasis (φωτίζεσθαι πρὸς τὴν φαντασίαν, ἀμυροτέρων φαίνεσθαι). Three reasons can be given for the placement of the doxa at the end.

- (1) Simply because it is an unusual view, i.e. that the sun and the moon should have the same light. As we have seen, such views are often relegated to the end.
- (2) Precisely because it is an 'epistemological view', i.e. it deals with how the two planets appear to the observer; cf. the placement of Epicurus' 'modal' view in 2.2.5\*, 2.4.13\*, 2.13.15\* etc.
- (3) Because it directly compares the sun and the moon. It so happens that in four chapters a lemma dealing with the sun and the moon together (also 2.20.15\*, 2.24.9\*, 2.30.9\*) appears to be placed at the end. In three cases (not 2.24.9\*) a comparative element is involved. One wonders whether there was a separate chapter in one of A's sources involving some kind of comparison between the sun and the moon, but it is hard to see how this could have been combined with a scheme such as we have in ch. 20–24 and 25–31.

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<sup>476</sup> The doxa can easily be deduced from material that was the basis of the kind of doxography found in D.L. 9.10. The fact that the moon is feebler needs to be explained precisely because the diminished light of the stars is accounted for in terms of their distance from the earth.



All three explanations are possible and viable, and it is perhaps not necessary to choose between them. In each case it entails that the doxa falls outside the type B diaeresis postulated above.

7. Finally a word should be said about the treatment of this question in the Epicurean tradition, which as we have seen earlier<sup>477</sup> reveals close and very interesting early links to the *Placita* tradition. In his *Ep. Pyth.* Epicurus first discusses the question of the moon's phases (§94 κένωσις καὶ πλήρωσις), which A treats in ¶29, before turning to the question of the source of its light. For this he compactly gives the two main positions before citing unspecified analogies in our own experience.

The approach taken by Lucretius two centuries later is more interesting.<sup>478</sup> In Book V he refers on three occasions to the subject of this chapter. (1) At 5.575–577, while discussing the question of the moon's size, he makes a parenthetical remark about the source of its light. The contrast between a 'bastard light' and 'its own light' is exactly the same as that found in Philo *Somn.* 1.23 (cf. also Lucian and Apuleius, who makes reference to the Lucretian passage).<sup>479</sup> (2) At 5.705–750 four explanations are given for the moon's illuminations, combining the questions of its light and its phases separated in Epicurus, but with the main emphasis on the former: (a) the moon is struck by the sun's rays, i.e. the dominant view; (b) the moon shines with its own light, so that (i) the phases are caused by the interposition of another body (cf. Epicurus *Ep. Pyth.* 94),<sup>480</sup> or (ii) the moon is half dark, half light, i.e. the doxa of Berosus, as indicated by the words in 726, *Babylonica Chaldaeorum doctrina*; (c) a fresh moon comes into being every day; this doxa in A is attributed to Xenophanes, see 2.13.13\* on the stars, and somewhat obscurely for both sun and moon at 2.24.8\*, but not used in ¶28. (3) At 5.768–770 in discussing the moon's concealments he cites the view that if the moon has its own light, it might grow faint in certain regions of the universe; this is reminiscent of the view of Heraclitus in this chapter, but obviously not the same (see also our comments at ch. 29 sect. 7).

Lucretius' debt to the doxographical tradition and its method in these passages is clear.<sup>481</sup> He uses the basic division to good effect,

<sup>477</sup> See above ch. 23 sect. 6.

<sup>478</sup> See further the discussion at Runia (1997), esp. 99–102.

<sup>479</sup> Cf. also Catullus 34.14, *notho lumine*. At Runia (1997) 101 it is argued that both poets may be dependent on doxographical texts.

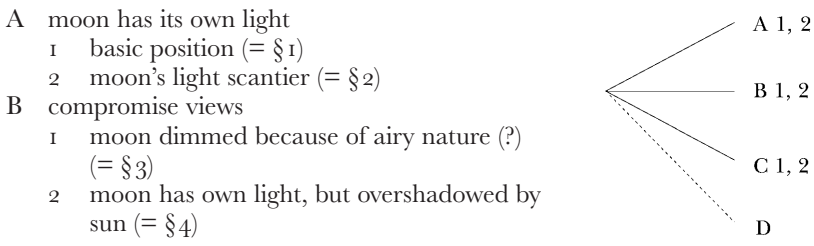
<sup>480</sup> Text cited in parallels to ¶29.

<sup>481</sup> On this debt see further Mansfeld (1990a) 3143–3154.

particularly in the second passage. Name-labels are not important to him and philosophers' names would not have been appropriate in the poetic context. He makes an exception for the doxa of Berosus, which can be suitably referred to as a foreign view. The chief point to be made, as in Epicurus, is the possibility of the various views (cf. 705 *potest*, 715 *possit*, 718 *licet esse*, 720 *potest*, 731 *cur nequeat*, also 769). Why should one fight for the one view rather than the other (cf. 729 *pugnat*, a clear reference to the *dissensio philosophorum*)? Ultimately it is the 'epistemological' aspect of the doxography when it is used for the doctrine of multiple explanation that is of chief interest for him, as it was for his teacher.

Lucretius' covert reference to Berosus also has a further point of interest. It has often been argued, notably by David Sedley, that the Roman poet is totally dependent on Epicurus for his philosophical material.<sup>482</sup> Moreover it has been generally assumed that Epicurus' doxographical material was derived primarily from Theophrastus.<sup>483</sup> But was it possible that Theophrastus made reference to Berosus' theory? Chronological considerations make this difficult, if not totally impossible.<sup>484</sup> Even though Lucretius' debt to Epicurus in the use of doxography is obvious, it is probable in our view that he also made use of traditions that developed during the Hellenistic period.<sup>485</sup>

STRUCTURE (see above sect. 6)



<sup>482</sup> In particular to the work *On nature* in 37 books, very little of which remains. See Sedley (1998), who calls Lucretius a fundamentalist.

<sup>483</sup> From Usener (1887) xli onwards; cf. also Mansfeld (1994) 30, who sets the issue aside.

<sup>484</sup> See further Runia (1997) 101–102; the argument is side-stepped by Sedley (1998) 91.

<sup>485</sup> See also the research by Mansfeld on his psychology cited above n. 481.

- C moon has light from the sun  
 1 basic position (= §5)  
 2 other philosophers (= §6)  
 D additional unusual or 'epistemological' view  
 1 sun and moon have same light, but moon's appears dimmer (= §7)

## RECONSTRUCTED TEXT

κη'. Περί<sup>1</sup> φωτισμῶν<sup>2</sup> σελήνης

- 1 Ἀναξίμανδρος Ξενοφάνης Βήρωσος ἴδιον αὐτὴν ἔχειν φῶς.  
 2 Ἀριστοτέλης ἴδιον μέν, ἀραιότερον δέ πως.  
 3 οἱ Στωικοὶ ἀμαυροφανές, ἀεροειδές γάρ.  
 4 Ἀντιφῶν ἰδιοφέγγη<sup>3</sup> τὴν σελήνην, τὸ δ' ἀποκρυπτόμενον περὶ  
 αὐτὴν ὑπὸ τῆς προσβολῆς<sup>4</sup> τοῦ ἡλίου ἀμαυροῦσθαι, πεφυκότος τοῦ  
 ἰσχυροτέρου πυρός<sup>5</sup> τὸ ἀσθενέστερον ἀμαυροῦν· ὃ δὲ συμβαίνειν<sup>6</sup>  
 καὶ περὶ τὰ ἄλλα ἄστρα.  
 5 Θαλῆς πρῶτος ἔφη ὑπὸ τοῦ ἡλίου φωτίζεσθαι<sup>7</sup>.  
 6 Πυθαγόρας Παρμενίδης Ἐμπεδοκλῆς Ἀναξαγόρας Μητροδώρος  
 ὁμοίως.  
 7 Ἡράκλειτος τὸ αὐτὸ πεπονθέναι τὸν ἥλιον καὶ<sup>8</sup> τὴν σελήνην·  
 σκαφοειδεῖς γάρ<sup>9</sup> ὄντας τοῖς σχήμασι τοὺς ἀστέρας, δεχομένους  
 δέ<sup>10</sup> τὰς ἀπὸ τῆς ὑγρᾶς ἀναθυμιάσεως αὐγὰς, φωτίζεσθαι πρὸς  
 τὴν φαντασίαν, λαμπρότερος<sup>11</sup> μὲν τὸν ἥλιον, ἐν καθαρωτέρω  
 γὰρ ἀέρι φέρεσθαι, τὴν δὲ σελήνην ἐν θολωτέρω<sup>12</sup> καὶ διὰ τοῦτο<sup>13</sup>  
 ἀμαυροτέραν φαίνεσθαι.

1 δέ add. S

2 φωτισμοῦ G

3 ἰδίῳ φέγγει λάμπειν PE

4 τὸ δ' ὑποκρυπτόμενον ... ἀπὸ τῆς προσβολῆς E

5 ἰσχυροτέρου S, ἰσχυροτέρου πυρός P<sup>1</sup>E, ἰσχυροτέρου φωτός P<sup>2</sup>

6 συμβαίνειν SE, συμβαίνει P

7 S, Θαλῆς καὶ οἱ ἀπ' αὐτοῦ ὑπὸ τοῦ ἡλίου φωτίζεσθαι τὴν σελήνην PEQ, Θαλῆς  
 δέ ... G

8 τε καὶ S

9 δέ S

10 δέ om. S

11 λαμπρότερον PE

12 θολερῶ E

13 διὰ τοῦτο καὶ P

§1a 12A22; §1b 21A43 DK; §1c FGH 68o F19b; §2 T19 Gigon; §3 SVF 2.670; §4  
 87B27 DK; §5—; §6a—; §6b 28A42 DK; §6c 31A6o DK; §6d 59A77 DK; §6e 70A12  
 DK; §7 22A12 DK

## 28. On the illuminations of the moon

- 1 Anaximander, Xenophanes and Berosus (declare that) the moon has its own light.
- 2 Aristotle (declares that it has) its own (light), but it is dimmer somehow.
- 3 The Stoics (declare that its light is) murky in appearance, for it is air-like.
- 4 Antiphon (declares that) the moon has its own gleam, and that the part of it that is hidden is dimmed by the approach of the sun, since it is natural for the stronger fire to make the weaker one dim, which indeed also occurs in the case of the other heavenly bodies.
- 5 Thales was the first to say that it is illuminated by the sun.
- 6 Pythagoras, Parmenides, Empedocles, Anaxagoras and Metrodorus (declare) likewise.
- 7 Heraclitus (declares that) the sun and the moon undergo the same experience: since they are heavenly bodies that are bowl-like in their shapes and receive their radiance from the moist exhalation, they light up in their appearance (to us), the sun doing so more brightly because it moves in air that is purer, whereas the moon moves in murkier (air) and for this reason appears dimmer.

## DIALECTICAL-DOXOGRAPHIC PARALLELS

**Plato** *Cra.* 409a–b, τί δὲ ἡ “σελήνη”; τοῦτο δὲ τὸ ὄνομα φαίνεται τὸν Ἀναξαγόραν πιέζειν. τί δὴ; ἔοικε δηλοῦντι παλαιότερον ὃ ἐκεῖνος νεωστὶ ἔλεγεν, ὅτι ἡ σελήνη ἀπὸ τοῦ ἡλίου ἔχει τὸ φῶς. **Epicurus** *ap.* D.L. 10.94–95, ἔτι τε ἐνδέχεται τὴν σελήνην ἐξ ἑαυτῆς ἔχειν τὸ φῶς, ἐνδέχεται δὲ ἀπὸ τοῦ ἡλίου. καὶ γὰρ παρ’ ἡμῖν θεωρεῖται πολλά μὲν ἐξ ἑαυτῶν ἔχοντα, πολλά δὲ ἀφ’ ἐτέρων. καὶ οὐθὲν ἐμποδοστατεῖ τῶν ἐν τοῖς μετέωροις φαινομένων, ἔάν τις τοῦ πλεοναχοῦ τρόπου αἰὲ μνήμην ἔχη καὶ τὰς ἀκολούθους αὐτοῖς ὑποθέσεις ἅμα καὶ αἰτίας συνθεωρῇ καὶ μὴ ἀναβλέπων εἰς τὰ ἀνακόλουθα ταῦτ’ ὀγκοῖ ματαιῶς καὶ καταρρέπη ἄλλοτε ἄλλως ἐπὶ τὸν μοναχὸν τρόπον. **Lucretius** 5.575–577 *lunaque, sive notho fertur loca lumine lustrans | sive suam proprio iactat de corpore lucem, | quidquid id est ...; 705–750, luna potest solis radiis percussa nitere | inque dies magis id lumen convertere nobis | ad speciem, ...*(715) *est etiam quare proprio cum lumine possit | volvier et varias splendoris reddere formas; | corpus enim licet esse aliud, quod fertur et una | labitur omnimodis occursans officiensque, | nec potis est cerni, quia cassum lumine fertur. | versarique potest, globus ut, si forte, pilai | dimidia ex parti candenti lumine tinctus, | versandoque globum variantis edere formas, | donique eam partem, quae cumque est ignibus aucta, | ad speciem vertit nobis oculosque patentis; | inde minutatim retro contorquet et aufert | luciferam partem glomeraminis atque pilai; | ut Babylonica Chaldaicum doctrina refutans | astrologorum artem contra convincere tendit, | proinde quasi id fieri nequeat quod pugnat uterque | aut minus hoc illo sit cur amplectier ausis. | denique cur nequeat semper nova luna creari | ordine formarum certo certisque figuris | inque dies privos aborisci quaeque creata | atque alia illius reparari in parte locoque, | difficilest ratione docere et vin-*

cere verbis, | ordine cum <videas> tam certo multa creari ... (748) quo minus est mirum, si certo tempore luna | gignitur et certo deletur tempore rursus, | cum fieri possint tam certo tempore multa; cf. 768–770 cited below on ch. 29. **Cicero** *Div.* 2.10 (ex. of a physical *quaestio*), lunaque suo lumine an solis utatur? **Vitruvius** 9.1–3, nunc de crescenti lumine lunae deminutioneque, ut traditum est nobis a maioribus, dicam. Berosus, qui ab Chaldaeorum civitate sive natione progressus in Asia etiam disciplinam Chaldaicam patefecit, ita est professus: pilam esse ex dimidia parte candentem, reliqua habere caeruleo colore ... uti autem Aristarchus Samius mathematicus vigore magno rationes varietatis disciplinis de eadem reliquit, exponam. non enim latet lunam suum propriumque non habere lumen, sed esse uti speculum et ab solis impetu recipere splendorem ... **Philo** *Somm.* 1.23, 53, see above sect. 4; *Mut.* 67 (of the μετεωρολογικός), ἐρευνῶντα ... καὶ σελήνης περὶ φωτισμῶν, σχηματισμῶν, μειώσεως, αὐξήσεως ...; cf. *Prov.* 2.70 (Alexander), lunae vero lumen nonne inepte putatur, a sole juxta Providentiam desumere lucem, cum potius instar speculi casu in se incidentem formam recipiat? quemadmodum Empedocles (dixit) ... **Seneca** *Nat.* 7.27.1, ‘quare?’ inquis. dic tu mihi prius quare luna dissimillimum soli lumen accipiat, cum accipiat a sole. **Plutarch** *De facie* 929B–D, φωτίζεσθαι τοῖνυν τὴν σελήνην οὐχ ὥς ὕελον ἢ κρύσταλλον ἐλλάμψει καὶ διαφαύσει τοῦ ἡλίου πιθανόν ἐστιν, οὐδ’ αὖ κατὰ σύλλαμψίν τινα καὶ συναναγασμόν, ὥσπερ αἱ δᾶδες αὐξομένου τοῦ φωτός. οὕτως γὰρ οὐδὲν ἦττον ἐν νομισματικῇ ἢ διχομνηματικῇ παρὰ σελήνης ἡμῖν, εἰ μὴ στέγει μηδ’ ἀντιφράττει τὸν ἥλιον, ἀλλὰ δίδεισιν ὑπὸ μανότητος ἢ κατὰ σύγκρασιν εἰσολάμπει καὶ συνεξάπτει περὶ αὐτὴν τὸ φῶς. οὐ γὰρ ἔστιν ἐκκλίσεις οὐδ’ ἀποστροφάς αὐτῆς, ὥσπερ ὅταν ἢ διχότομος καὶ ἀμφίκυρτος ἢ μηνοειδής, αἰτιασθῇ περὶ τὴν σύνοδον, ἀλλὰ κατὰ στάθμην, φησὶ Δημόκριτος (68A69a), ἰσταμένη τοῦ φωτίζοντος ὑπολαμβάνει καὶ δέχεται τὸν ἥλιον, ὥστ’ αὐτὴν τε φαίνεσθαι καὶ διαφαίνειν ἐκείνον εἰκὸς ἦν ... ὁ δὲ λέγει Ποσειδώνιος, ὡς ὑπὸ βάθους τῆς σελήνης οὐ περαιοῦται δι’ αὐτῆς τὸ τοῦ ἡλίου φῶς πρὸς ἡμᾶς, ἐλέγχεται καταφανῶς. ὁ γὰρ ἀήρ ἀπλετος ὢν καὶ βάθος ἔχων πολλαπλάσιον τῆς σελήνης ὅλος ἐξηλιούται καὶ καταλάμπεται ταῖς αὐγαῖς. ἀπολείπεται τοῖνυν τὸ τοῦ Ἐμπεδοκλέους, ἀνακλάσει τινὶ τοῦ ἡλίου πρὸς τὴν σελήνην γίνεσθαι τὸν ἐνταυθὰ φωτισμόν ἅπ’ αὐτῆς. ὅθεν οὐδὲ θερμόν οὐδὲ λαμπρὸν ἀφικνεῖται πρὸς ἡμᾶς, ὥσπερ ἦν εἰκὸς ἐξάψεως καὶ μίξεως <δυοῖν> φώτων γεγεννημένης. 933D–E, ἔοικε δὲ πιθανώτερον εἶναι τὸ πρότερον· ἐν γὰρ ἡλίῳ πᾶσα πυρὸς φύσις οὐ μόνον τὸ λαμπρὸν ἀπόλλυσιν, ἀλλὰ τῷ εἶκειν γίνεται δύσεργος καὶ ἀμβλυτέρα· σκίδνησι γὰρ ἡ θερμότης καὶ διαχέει τὴν δύναμιν. εἴπερ οὖν ἡ σελήνη πυρὸς εἴληχε βληχροῦ καὶ ἀδρανούς, ἄστρον οὕσα θολερώτερον, ὥσπερ αὐτοὶ [sc. οἱ Στωικοὶ] λέγουσιν, οὐθὲν ὢν πάσχουσα φαίνεται νῦν, ἀλλὰ τὰ ἐναντία πάντα πάσχειν αὐτὴν προσήκόν ἐστι, φαίνεσθαι μὲν ὅτε κρύπτεται, κρύπτεσθαι δ’ ὅπηνικα φαίνεται. **Apuleius** *De deo Socr.* 1–2 7.12–8.9 Moreschini, diei opificem lunamque ... seu corniculata seu dividua seu protumida seu plena sit ..., sive illa proprio sed non perpeti candore (pollens), ut Chaldaei arbitrantur, parte luminis compos, parte altera cassa fulgoris, pro circumversione oris discoloris multiiuga [pollens] speciem sui variat, seu tota proprii candoris experts, alienae lucis indigua, denso corpore sed levi ceu quodam speculo radios solis obstipi vel adversi sususpat et, ut verbis utar Lucreti, ‘notham iactat de corpore lucem’. utra(cum)que harum vera sententia est—nam hoc postea videro (not extant) ... **Cleomedes**

*Cael.* 2.4.1–31 Todd, περί δὲ τῶν φωτισμῶν αὐτῆς πλείους γεγόνασι λόγοι. Βήρωσος μὲν γὰρ ἡμίπυρον οὖσαν αὐτὴν πλείονας κινήσεις κινεῖσθαι ἀπεφήνατο, μίαν μὲν τὴν κατὰ μῆκος, ἣν σὺν τῷ κόσμῳ κινεῖται, ἑτέραν δὲ τὴν κατὰ πλάτος καὶ ὕψος καὶ ταπείνωμα, ὅπερ καὶ ἐπὶ τῶν πέντε πλανήτων ὁρᾶται γινόμενον, ἄλλην δὲ τὴν περὶ τὸ ἐαυτῆς κέντρον, καθ' ἣν κίνησιν στρεφομένην αὐτὴν ὑπολαμβάνει καὶ ἄλλοτε ἄλλα μέρη αὐτῆς ἐπιστρέφουσιν πρὸς ἥλιον αὖξεσθαι καὶ μειοῦσθαι, καὶ ταύτην τὴν στροφὴν ἰσοχρόνιον αὐτῇ πρὸς τὴν σύνοδον τοῦ ἡλίου γίνεσθαι. ἐστὶ δ' εὐέλεγκτος ἡ δόξα αὐτοῦ ... ἕτεροι δὲ φασιν ὑπὸ τοῦ ἡλίου μὲν ἐλλάμπεσθαι αὐτὴν, κατὰ ἀνάγκασιν δὲ φωτίζειν τὸν ἄερα· ὅπερ καὶ ἐπὶ τῶν ἐσόπτρων ὁρᾶται γινόμενον καὶ τῶν λαμπρῶν ἀργυρωμάτων καὶ ὅσα τούτοις ἔοικε. τρίτη ἐστὶν αἴρεσις ἡ λέγουσα κινᾶσθαι αὐτῆς τὸ φῶς ἕκ τε τοῦ οἰκείου καὶ τοῦ ἡλιακοῦ φωτὸς καὶ τοιοῦτον γίνεσθαι οὐκ ἀπαθοῦς μενούσης αὐτῆς οὐδὲ παραπλησίως τοῖς στερεοῖς τῶν λαμπρῶν σωμάτων ἀποπαλλομένης ἐχούσης τὰς αὐγὰς καὶ κατὰ ἀνάγκασιν φωτίζουσης τὸν ἄερα, κατ' ἀνταύγειαν δεχομένης ἀπὸ τοῦ ἡλίου τὰς ἀκτῖνας καὶ οὕτως ἀποπεμπούσης πρὸς ἡμᾶς, ἀλλ' ἀλλοιουμένης ὑπὸ τοῦ ἡλιακοῦ φωτὸς καὶ κατὰ τοιαύτην τὴν κρᾶσιν ἴδιον ἰσχύουσης τὸ φῶς, οὐ πρῶτως, ἀλλὰ κατὰ μετοχήν, ὡς διάπυρος σίδηρος κατὰ μετοχήν ἴσχει τὸ φῶς οὐκ ἀπαθῆς ὢν, ἀλλὰ τετραμμένος ὑπ' αὐτοῦ. αὕτη ἡ αἴρεσις ὑγιεινέστερα τῆς λεγούσης κατὰ ἀνάγκασιν φωτίζειν τὴν σελήνην ... 2.5.81, ἥδεσαν δὲ καὶ οἱ παλαιότατοι τῶν φυσικῶν τε καὶ ἀστρολόγων, ὅτι ἀπὸ τοῦ ἡλίου ἡ σελήνη τὸ φῶς ἔχει ... **Lucian** *Icar.* 20 (on this text see above ch. 25), τὰ τελευταῖα δὲ καὶ τὸ φῶς αὐτὸ κλοπιμαῖόν τε καὶ νόθον εἶναι μοί φασιν ἄνωθεν ἦκον παρὰ τοῦ Ἥλιου, καὶ οὐ παύονται καὶ πρὸς τοῦτόν με ἀδελφὸν ὄντα συγκροῦσαι καὶ στασιάζουσαι προαιρούμενοι. **Theon Smyrnaeus** *Expos.* 198.14–99.2, Εὐδημος ἱστορεῖ ἐν ταῖς Ἀστρολογίαις, ὅτι Οἰνοπίδης εὔρε πρῶτος ... Ἀναξιμένης δὲ ὅτι ἡ σελήνη ἐκ τοῦ ἡλίου ἔχει τὸ φῶς καὶ τίνα ἐκλείπει τρόπον. **Ammianus Marcellinus** 20.3.8, quam (sc. lunam) numquam habet proprium lumen opiniones variae collegerunt. **Augustine** *Enarr. in Ps.* 10.3 CCL 38.1.75, duae sunt de luna opiniones probabiles. harum autem quae vera sit aut non omnino aut difficillime arbitror posse hominem scire. cum enim quaeritur unde lumen habeat, alii dicunt suum habere sed globum eius dimidium lucere dimidium autem obscurum esse ... alii autem dicunt non habere lunam lumen proprium sed a sole illustrari ... **Isidore of Seville** *De rer. nat.* 18 (who cites Augustine).

Aëtius *Placita* 2.29  
Περὶ ἐκλείψεως σελήνης

WITNESSES

Ps.Plutarch 2.29, Eusebius 15.51, ps.Galen 70, Qusṭā Ibn Lūqā 2.29  
Stobaeus 1.26.3  
Theodoret 4.24  
Cf. Achilles 21

ANALYSIS

1. The next lunar theme broached by our doxographer, the moon's eclipses, follows on logically from the problem of its illuminations. There is, however, a snag which recalls the problems we had with the two kinds of shape in ch. 27.<sup>486</sup> The noun ἔκλειψις in the chapter's title is linked to the verb ἐκλείπειν, which literally means 'to fail', so in the case of the moon it can be and is used both for the regular monthly phases of illumination (which at the new moon 'fail' completely) and for irregular lunar eclipses. It will emerge that in the present chapter there is at least partial confusion as to which of the two options the doxai are referring to.<sup>487</sup>

2. It can be assumed along the lines argued in the previous chapter that S has preserved A's basic text with a minimum of change. There are nine doxai:

- |        |  |
|--------|--|
| 1.26.3 | Περὶ δὲ ἐκλείψεως σελήνης  |
| S1     | Ἀναξίμανδρος τοῦ στομίου τοῦ περὶ τὸν τροχὸν ἐπιφραττομένου.   |
| S2     | Βήρωσος κατὰ τὴν πρὸς ἡμᾶς ἐπιστροφὴν τοῦ ἀπυρώτου μέρους.   |
| S3     | Ἀλκμαίων, Ἡράκλειτος, Ἀντιφῶν κατὰ τὴν τοῦ σκαφοειδοῦς<br>στροφὴν καὶ τὰς περικλίσεις.   |
| S4     | τῶν Πυθαγορείων τινὲς κατὰ τὴν Ἀριστοτέλειον ἱστορίαν καὶ τὴν<br>Φιλίππου τοῦ Ὀπουντίου ἀπόφασιν ἀντιφράξει τότε μὲν τῆς γῆς,<br>τοτε δὲ τῆς ἀντίχθονος. |

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<sup>486</sup> See above ch. 27 sect. 3(4) & 5.

<sup>487</sup> Note that Hippolytus 1.8.10 says that Anaxagoras was the first to distinguish the two, so there was certainly awareness of the distinction in the doxographical tradition.

- S5 τῶν δὲ νεωτέρων εἰσὶ τινες οἷς ἔδοξε κατ' ἐπινέμησιν φλογὸς κατὰ μικρὸν ἑξαπτομένης τεταγμένως, ἕως (ἂν) τὴν τελείαν πανσέληνον ἀποδῶ, καὶ πάλιν ἀναλόγως μειουμένης μέχρι τῆς συνόδου καθ' ἣν τελείως σβέννυται.
- S6 Ξενοφάνης καὶ τὴν μηνιαίαν ἀπόκρυψιν κατὰ σβέσιν.
- S7 Θαλῆς, Ἀναξαγόρας, Πλάτων, οἱ Στωικοὶ τοῖς μαθηματικοῖς συμφώνως τὰς μὲν μηνιαίους ἀποκρύψεις συνοδεύουσιν αὐτὴν ἡλίῳ καὶ περιλαμβομένην ποιῆσθαι, τὰς δ' ἐκλείψεις εἰς τὸ σκίασμα τῆς γῆς ἐμπίπτουσιν, μεταξὺ μὲν ἀμφοτέρων τῶν ἀστέρων γενομένης, μᾶλλον δὲ τῆς σελήνης ἀντιφραττομένης.
- S8 Ἀναξαγόρας, ὥς φησι Θεόφραστος, καὶ τῶν ὑποκάτω τῆς σελήνης ἔσθ' ὅτε σωμάτων ἐπιπροσθιούνται.
- S9 Χρύσιππος ἐκλείπειν τὴν σελήνην τῆς γῆς αὐτῇ ἐπιπροσθούσης καὶ εἰς σκίαν αὐτῆς ἐμπίπτουσιν.

There seems very little that is exceptionable in this text, and even the usual Stobean additions seem scanty (δὲ in the title is an obvious case). But we may well have our suspicions about the final doxa, particularly because it is the only one to repeat the subject from the title. Other details can be examined once we have adduced the evidence of P and his tradition.

3. P records five (or six if we divide up P<sub>4</sub>) of the lemmata preserved in S:

κθ'. Περί ἐκλείψεως σελήνης

- P2.29.1 Ἀναξίμανδρος τοῦ στομίου τοῦ περὶ τὸν τροχὸν ἐπιφραττομένου.
- P2.29.2 Βήρωσος κατὰ τὴν πρὸς ἡμᾶς ἐπιστροφὴν τοῦ ἀπυρώτου μέρους.
- P2.29.3 Ἡράκλειτος κατὰ τὴν τοῦ σκαφοειδοῦς συστροφὴν.
- P2.29.4 τῶν Πυθαγορείων τινὲς ἀντανγεία καὶ ἐπιφράξει τὸ μὲν τῆς γῆς τὸ δὲ τῆς ἀντίθρονος· οἱ δὲ νεώτεροι κατ' ἐπινέμησιν φλογὸς κατὰ μικρὸν ἑξαπτομένης τεταγμένως, ἕως ἂν τὴν τελείαν πανσέληνον ἀποδῶ, καὶ πάλιν ἀναλόγως μειουμένης μέχρι τῆς συνόδου, καθ' ἣν τελείως σβέννυται.
- P2.29.5 Πλάτων Ἀριστοτέλης οἱ Στωικοὶ οἱ μαθηματικοὶ συμφώνως τὰς μὲν μηνιαίους ἀποκρύψεις συνοδεύουσιν αὐτὴν ἡλίῳ καὶ περιλαμβομένην ποιῆσθαι, τὰς δ' ἐκλείψεις εἰς τὸ σκίασμα τῆς γῆς ἐμπίπτουσιν, μεταξὺ μὲν ἀμφοτέρων τῶν ἀστέρων γενομένης, μᾶλλον δὲ τῆς σελήνης ἀντιφραττομένης.

The method of dealing with A's text can again be reconstructed with precision. As usual P adopts a two-pronged attack, thinning out both doxai and name-labels.



- (1) The first two lemmata (= S<sub>1-2</sub>) are retained without change.
- (2) Of the three name-labels in S<sub>3</sub> (Alcmaeon–Heraclitus–Antiphon), only the middle one is used, a very reasonable procedure given the links to 2.27.3\* and 2.28.7\*.
- (3) Both lemmata on the Pythagoreans (S<sub>4-5</sub>) are written out, but the additional doxa of Xenophanes (S<sub>6</sub>), which is tacked on to the second Pythagorean view, is deleted.
- (4) In the case of S<sub>7</sub> the name-labels are again modified. Somewhat unexpectedly the first two names Thales and Anaxagoras are dropped while Aristotle is included, leaving him with the familiar trio Plato–Aristotle–Stoics, together with the astronomers. This makes us wonder what S did with his name-labels in the case of this doxa.
- (5) The final two lemmata S<sub>8-9</sub> are not retained. The second Anaxagorean doxa adds little, and the final doxa, as we shall see, was probably not present in A.

There are a number of textual differences between the various witnesses to P's tradition (but no divergences for the title). E is unusually careless in his coalescence of the first two doxai and has a number of other deviations from P.<sup>488</sup>

4. For this chapter T unfortunately only indicates that the subject was treated in his source (see the text cited in ch. 27 sect. 4). However, Ach does include four doxai on the moon's eclipse in his chapter *Περὶ σελήνης*, recorded straight after the doxography on its shape (cf. above ch. 27):

*Isagoge* 21, 49.8–14 Maass ~ 30.12–17 Di Maria

- |      |   |
|------|---|
| Ach1 | κατὰ μῆνα δὲ ἐκλείπει, ὥς μὲν Ἡράκλειτός φησιν, ὁμοίως τῷ ἡλίῳ τοῦ φωτοειδοῦς σχήματος ἀναστραφέντος, |
| Ach2 | ἄλλοι δὲ τοῦ στομίου τοῦ τροχοειδοῦς, δι' οὗ ἐκπέμπεται τὸ φῶς, ἀποφραχθέντος,                        |
| Ach3 | ὥς δὲ ἄλλοι, ὅταν περὶ τὸ κωνοειδὲς τῆς γῆς γένηται δύνουσα,  |
| Ach4 | ὥς δὲ οἱ πολλοί, κατὰ διάμετρον γενομένη ἡλίῳ. γίνεται δὲ κατὰ μῆνα ἕκαστον.                          |

Ach starts off by indicating—in contrast to A—that he is only explaining the monthly phases of the moon. Only the first Heraclitean doxa has a name-label. The words ὁμοίως τῷ ἡλίῳ remind us of the combination of moon and sun in 2.28.6\*, while the participle ἀναστραφέντος recalls *στροφήν* at S<sub>3</sub> in 2.29.<sup>489</sup> The second view is clearly that of

<sup>488</sup> Q's addition to P<sub>5</sub> (see apparatus to the text) is probably an Arabic gloss, as suggested by Daiber *ad loc.*

<sup>489</sup> Diels' conjecture *σκαφοειδοῦς ὀχήματος* is tempting but hardly compelling (Di

Anaximander (for whom Ach appears to have a soft spot), with considerable terminological resemblance; cf. S1. The third explanation has the moon sink into the conical shadow of the earth, which of course recalls the standard explanation of an eclipse; cf. S7, second half. But Ach has told us he is talking about the monthly phases, so this doxa introduces confusion. Ach's doxography amounts to S3-1-7, and can be taken to represent a parallel tradition with points of contact with A's anterior tradition.

5. Turning now to the analysis of the contents of the chapters, we can begin by observing that the name-labels used show a good deal of overlap with the previous chapter. See the following list:

Anaximander	28 S1	29 S1
Xenophanes	28 S1	29 S6
Berosus	28 S1	29 S2
Aristotle	28 S2	29 P5 (not in S)
Stoics	28 S3	29 S7
Antiphon	28 S4	29 S3
Thales	28 S5	29 S7
Pythagoras (& followers)	28 S5	29 S4
Parmenides	28 S5	—
Empedocles	28 S5	—
Anaxagoras	28 S5	29 S7-8
Metrodorus	28 S5	—
Heraclitus	28 S6	29 S2
Alcmaeon		29 S2
Plato		29 S7
astronomers		29 S7
Chrysippus		29 S9

All name-labels (except Chrysippus) which have a doxa to themselves reappear in the other chapter (on the difficulty with regard to Aristotle see below). Discrepancies are limited to the doxai which contain clusters of name-labels, and especially the long list used in both chapters for what one might call the 'majority view', in both chapters headed by Thales. The overlap is striking (and continues in 2.30, with only the addition of the name-label of Democritus not found in the previous two chapters). We have also noted that the doxographer has had difficulty separating the questions of the moon's illuminations, phases and

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Maria merely brackets σχήματος). Ach's text could reflect σκαφοειδεῖς ὄντας τοῖς σχήμασι ... φωτίζεσθαι in ¶28.6\*.

eclipses. Both observations suggest that in the anterior doxographical tradition the doxai were at some stage not yet divided into separate chapters as we find in A.

A further observation is that this chapter resembles the previous one in beginning with Anaximander (this also occurs in 2.20–21,<sup>490</sup> 2.25),<sup>491</sup> and also accords a central role to Thales as representative of the ‘majority view’. This suggests that the diaeresis that dominated the structure of 2.28 may well play an important role in 2.29 as well. Certainly two groups of doxai can easily be identified. The first three S1–2–3 all involve the moon having its own light and this being blocked or removed from view. The first two doxai share name-labels with 2.28.1\*, which set out the ‘own light’ view. The third has three name-labels, but it seems primarily linked to the Heraclitean position in 2.27.3\* and 2.28.7\*. The final three S7–8–9 also clearly belong together in explaining eclipses in relation to the view that the moon’s light is caused by reflection of the sun’s light. The large number of names associated with this view, as in ¶28, are no doubt meant to indicate that it is the dominant opinion.

The final group of doxai in S does pose a few problems. Not only, as noted above, does P delete the names of Thales and Anaxagoras (perhaps to avoid the doublet), but he also adds that of Aristotle. Did P add or S leave out? Since Aristotle has a doxa for himself in ¶28 and given the correspondence of name-labels between the two chapters, we opt for the latter.<sup>492</sup> But it is noteworthy that both he and the Stoics move from the one side of the diaeresis to the other.<sup>493</sup> The final doxa attributed to Chrysippus seems entirely superfluous when added to the report in the majority view. Moreover, it alone reintroduces the subject with the words ἐκλείπειν τὴν σελήνην. On the balance of probability it seems more likely, *pace* Diels, that it is derived from AD.<sup>494</sup> A had already inserted an extract from Chrysippus on the moon at the end of the coalesced clusters (S in 1.25.11). This present doxa could easily be

<sup>490</sup> In 2.20 as we have now reconstructed it, contrary to our earlier view in Runia (1992).

<sup>491</sup> The name-label Anaximenes in some mss. of P must be a mistake.

<sup>492</sup> It is hard to determine why S dropped the name-label. Perhaps it was through oversight, or he might have intended to quote AD at the end of the chapter (cf. his 1.25.4). It may also have dropped out in the mss. tradition.

<sup>493</sup> This is clearly correct; see texts listed below under Aristotle, and for the Stoa esp. Posidonius at Plu. *De facie* 932c and D.L. 7.146 (= fr. F125–126 E.–K.).

<sup>494</sup> And should thus be added to the list of doxai in Diels to be subtracted from A and added to AD at *Aëtiana* Vol. I:252, and at Runia (1996a) 374.

the continuation of that passage. For these reasons it is better to delete the lemma from our reconstruction.

Three doxai in the middle of the chapter remain: S<sub>4</sub>-5-6. They appear to link up with the main diaeresis in a chiasmic fashion.<sup>495</sup> The first Pythagorean view is related to the dominant view, but adds the interposition of the counter-earth.<sup>496</sup> The second younger group, however, espouses a theory of gradual inflammation and quenching, to which the similar view of Xenophanes is tagged on (note again the confusion of eclipses and phases).<sup>497</sup> This means that the basic diaeresis is found within the Pythagorean school itself. The arrangement seems not very happy, not only because it breaks up the logical ordering of the doxai, but also because the arrangement obscures the close relationship of the early Pythagorean view with that of Anaxagoras, who also regarded the interposition of the earth alone as insufficient to explain lunar eclipses.<sup>498</sup> Both invoke extra bodies, i.e. the counter-earth and meteorites. We note that at Aristotle *Cael.* 2.13 293b21–23 the two views are placed side by side, without names being mentioned, but this is in the context of a discussion of the earth. One can only conclude that A gave priority to the chronological ordering of the two Pythagorean groups.

In summary, then, the chapter has a clear structure based on a type B diaeresis. Similarly to what we found in the previous chapter the main diaphonia is formed between the views based on the moon having its own light and light being received from elsewhere (with eclipses caused by interposition). In between these two poles there are intermediate views which, as suggested above, may have a chiasmic arrangement.

6. The dialectical-doxographical parallels add to the material collected on 2.28. In Aristotle the eclipse of the moon is a standard example of finding the τὸ ὅτι via the μέσον, i.e. it is another example of a question

<sup>495</sup> Cf. the chiasmic structure evident in ch. 1.

<sup>496</sup> S's reading ἀντιφράξει seems the result of a small parablepsis when writing out P's ἀντ[ανγεία καὶ ἐπ]ιφράξει. The dative in P is to be preferred to the accusative in E in line with the usual way that A indicates causation. Huffman (1993) 246 suggests the doxa might be based on a mistaken reading of Aristotle *Cael.* 2.13 293a18–b2.

<sup>497</sup> This doxa has received almost no attention (not even in Zeller); only brief comments at Huffman (1993) 240, 274.

<sup>498</sup> Especially their greater number compared with those of the sun; cf. Burkert (1972) 344, Guthrie (1962–1981) 2.283.

involving the διὰ τί or the cause. Once again it is the Epicurean tradition that is of most interest. Epicurus divides the subject in two. He first explains the phases of the moon by giving a brief doxography of three explanations formulated in the most general terms (*Ep. Pyth.* 94): (a) through the turning of the moon's body; cf. 2.29.2\*;<sup>499</sup> (b) through the configurations of the air; cf. 2.28.6\*; (c) through the interposition of bodies; cf. 2.29.8\* (and implied in 2.29.7\*). He then follows with a general conclusion about the epistemology of multiple causation using analogies from our own experience. We note that the four-fold use of the prepositional phrases with κατὰ and nouns of action corresponds exactly to what we find in 2.29.2–3, 6\*. In *Ep. Pyth.* 96 he then goes on to explain the eclipse of the sun and moon together, following the same pattern, with two possible explanations (though quenching, cf. 2.29.6\*, and interposition, cf. 2.29.7–8\*), followed by another epistemological conclusion. The reference to the interposition of 'another visible body like the earth' could allude either to the view of the Pythagoreans in 2.29.4\* or that of Anaxagoras in 2.29.8\*. The scholion added to the text gives a reference to Book 12 of *On nature*, where Epicurus must have set out the various explanations at greater length,<sup>500</sup> and also an additional view 'through withdrawal', which does not correspond to anything in A.<sup>501</sup> Lucretius follows his master's lead in 5.762–770 and gives three explanations: (a) through passing in the earth's shadow; cf. 2.29.7\*;<sup>502</sup> (b) through the interposition of bodies (cf. 2.29.4\*, 2.29.8\*); through growing faint (cf. 2.29.5\* and perhaps the view in the scholion above). By means of his additional remark on the third view at 768 the poet makes quite clear that he understands the relation to the diaeresis of A's previous chapter (alien or own light). Once again these texts show a certain debt to the doxographical tradition anterior to A both for the material used and—we may surmise—its method of outlining various positions by means of diaereses, cleverly adapted to the idiosyncratic epistemology of the Garden. We may contrast the position adopted by the Stoa as illustrated by Cleomedes: there is but a single cause of lunar eclipses, so there is no need to mention other views; see the text cited below.

<sup>499</sup> But for chronological reasons it is unlikely that Epicurus has Berosus specifically in mind; cf. ch. 28 sect. 7 and n. 484.

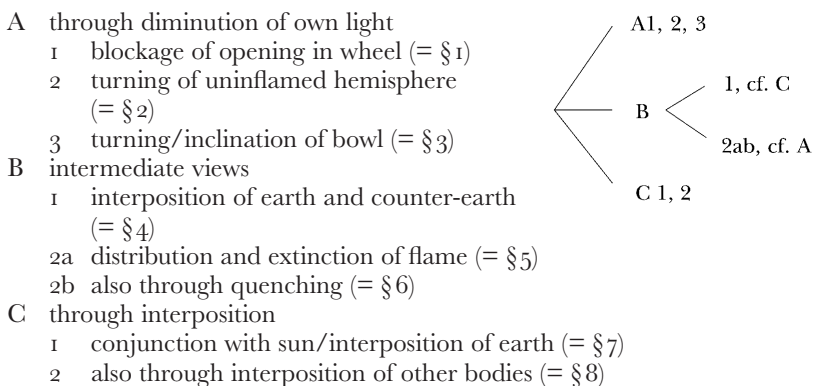
<sup>500</sup> On this book see further Sedley (1998) 121–122.

<sup>501</sup> But it is paralleled in Servius; cf. above ch. 24 sect. 6.

<sup>502</sup> As Bailey (1947) 1447 points out, by placing it first he may give it preference.

7. Finally it should be noted that this chapter is exceptional in citing no less than three original sources for the reports on which the doxai are based, all of them (note well!) preserved by S but deleted by P, namely Aristotle and Philip of Opus in 2.29.4\* and Theophrastus in 2.29.8\*. The reference to Aristotle could be to his monograph *Περὶ τῶν Πυθαγορείων* (it is included as fr. 16 Ross) or it could perhaps be based on the text at *Cael.* 2.13 293a21 (cited below).<sup>503</sup> The mention of Philip of Opus is doubtless based on his work *Περὶ ἐκλείψεως σελήνης* cited by the *Souda* Φ 418. But who would have made explicit reference to these reports? Given the third reference, it is of course tempting to ascribe this role to Theophrastus, whether in his *Physics* (cf. 2.20.5\*) or in his *Φυσικαὶ δόξαι*.<sup>504</sup> Since, however, he never cites Aristotle by name, it is not so likely that he is the source, but rather that the references were added in the tradition later.

STRUCTURE (cf. above sect. 5)



RECONSTRUCTED TEXT

κθ'. Περὶ<sup>1</sup> ἐκλείψεως σελήνης

- 1 Ἀναξίμανδρος<sup>2</sup> τοῦ στομίου τοῦ περὶ τὸν τροχὸν ἐπιφραττομένου.
- 2 Βήρωσος<sup>3</sup> κατὰ τὴν πρὸς ἡμᾶς ἐπιστροφὴν τοῦ ἀπυρῶτου<sup>4</sup> μέρους.
- 3 Ἀλκιμαίων Ἡράκλειτος Ἀντιφῶν<sup>5</sup> κατὰ τὴν τοῦ σκαφοειδοῦς  
στροφὴν καὶ τὰς περικλίσεις<sup>6</sup>.

<sup>503</sup> In which case a misinterpretation is involved; see above n. 496.

<sup>504</sup> It is claimed for the *Φυσικῶν δόξαι* by Diels, fr. 19.

- 4 τῶν Πυθαγορείων τινὲς κατὰ τὴν Ἀριστοτέλειον ἱστορίαν καὶ τὴν  
Φιλίππου τοῦ Ὀπουντίου ἀπόφασιν ἀνταυγεία καὶ ἐπιφράξις<sup>7</sup> τοτὲ  
μὲν τῆς γῆς τοτὲ δὲ τῆς ἀντίχθονος<sup>8</sup>.  
5 τῶν δὲ νεωτέρων<sup>9</sup> εἰσὶ τινες οἷς ἔδοξε κατ' ἐπινέμησιν φλογὸς<sup>10</sup>  
κατὰ μικρὸν ἐξαπτομένης τεταγμένως, ἕως ἂν τὴν τελείαν  
πανσέληνον ἀποδῶ, καὶ πάλιν ἀναλόγως μειουμένης μέχρι τῆς  
συνόδου, καθ' ἣν τελείως σβέννυται.  
6 Ξενοφάνης καὶ τὴν μηνιαίαν ἀπόκρυψιν κατὰ σβέσιν.  
7 Θάλῃς Ἀναξαγόρας<sup>11</sup> Πλάτων Ἀριστοτέλης<sup>12</sup> οἱ Στωικοὶ οἱ μαθη-  
ματικοὶ συμφώνως<sup>13</sup> τὰς μὲν μηνιαίους ἀποκρύψεις συνοδεύουσιν  
αὐτὴν ἡλίῳ καὶ περιλαμπομένην ποιεῖσθαι<sup>14</sup>, τὰς δ' ἐκλείψεις εἰς τὸ  
σκίασμα τῆς γῆς ἐπιπίπτουσιν, μεταξὺ μὲν ἀμφοτέρων τῶν ἀστέρων  
γινομένης, μᾶλλον δὲ τῆς σελήνης ἀντιφραττομένης<sup>15</sup>.  
8 Ἀναξαγόρας, ὥς φησι Θεόφραστος, καὶ τῶν<sup>16</sup> ὑποκάτω τῆς  
σελήνης ἔσθ' ὅτε σωμάτων ἐπιπροσθούντων.

1 δέ add. S

2 Ἀναξίμανδρος SP<sup>1</sup>EQG, Ἀναξίμενης P<sup>2</sup>

3 om. E

4 πυρώδους E

5 Ἀντίφαντος S, corr. Heeren

6 S, συστροφὴν P, στροφὴν E

7 ἀνταυγεία καὶ ἐπιφράξις P, ἀνταύγειαν καὶ ἐπίφραξιν E, ἀντιφράξις S (cf. Q),  
κατ' ἀνταύγειαν καὶ ἀντιφραξιν G

8 τῆς γῆς ἢ τῆς ἀντίχθονος E (τε ... καὶ G)

9 τῶν δὲ μεθ' ἑτέρων ... codd. S, corr. Canter, οἱ δὲ νεώτεροι PEQ

10 φωτός E

11 Θάλῃς Ἀναξαγόρας om. P

12 Ἀριστοτέλης om. S

13 συμφωνοῦσι E

14 'und dadurch, daß das von ihm Erleuchtete der Sonne gegenübersteht' add. Q

15 μᾶλλον δὲ τῆς σελήνης ἀντιφραττομένης crucem adfixerunt Diels (qui proposuit  
ἡλίον δέ ...) Mau, sed sanum acceperunt Bernadakis Mras Torraca Lachenaud

16 τινῶν conj. Usener

§ 1 12A22 DK: § 2 FGH 680 F19c; § 3a 24A4 DK; § 3b 22A12 DK; § 3c 87B28 DK; § 4–  
5 58B36 DK; § 6 21A43 DK; § 7a–; § 7b 59A77 DK; § 7c–; § 7d–; § 7e SVF 2.676; § 7f–;  
§ 8 59A77 DK, fr. 236 FHS&G

## 29. On the moon's eclipse

- 1 Anaximander (declares that the moon is eclipsed) when the mouth on  
the wheel (of fire) is obstructed.  
2 Berosus (declares that it is eclipsed) in accordance with the turning of  
the uninflamed part (of the moon) towards us.

- 3 Alcmaeon, Heraclitus and Antiphon (declare that it is eclipsed) in accordance with the turning of the bowl-like (shape of the moon) and its lateral motions.
- 4 Some of the Pythagoreans according to the research of Aristotle and the assertion of Philip of Opus (declare that it is eclipsed) through reflection and obstruction sometimes of the earth and sometimes of the counter-earth.
- 5 But there are some of the younger (members of the school), in whose opinion (an eclipse takes place) in accordance with the dissemination of a flame that slowly catches alight in an orderly manner, until it produces the complete full moon, and (then) analogously diminishes again until the conjunction (with the sun), when it is completely extinguished.
- 6 Xenophanes (declares that) the monthly concealment too (takes place) by quenching.
- 7 Thales, Anaxagoras, Plato, Aristotle, the Stoics and the astronomers agree in unison that it (the moon) produces the monthly concealments by travelling together with the sun and being illuminated by it, whereas it produces the eclipses by descending into the shadow of the earth which interposes itself between the two heavenly bodies, or rather when the moon is obstructed (by the earth).
- 8 Anaxagoras, as Theophrastus states, (declares that it is eclipsed) also when it happens that bodies (in the space) below the moon interpose themselves.

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Aristotle** *APo.* 2.1 90a2–18, λέγω δὲ τὸ ὅτι ἔστι ἐπὶ μέρους καὶ ἀπλῶς, ἐπὶ μέρους μὲν, ἄρ' ἐκλείπει ἢ σελήνη ἢ αὔξεται; εἰ γὰρ ἔστι τί ἢ μὴ ἔστι τί, ἐν τοῖς τοιούτοις ζητοῦμεν· ἀπλῶς δ', εἰ ἔστιν ἢ μὴ σελήνη ἢ νύξ. ... τὸ μὲν γὰρ αἴτιον τὸ μέσον, ἐν ἅπασι δὲ τοῦτο ζητεῖται. ἄρ' ἐκλείπει; ἄρ' ἔστι τι αἴτιον ἢ οὐ; ... τί ἔστιν ἐκλειψις; στέρσις φωτὸς ἀπὸ σελήνης ὑπὸ γῆς ἀντιφράξεως. διὰ τί ἔστιν ἐκλειψις, ἢ διὰ τί ἐκλείπει ἢ σελήνη; διὰ τὸ ἀπολείπειν τὸ φῶς ἀντιφραττοῦσης τῆς γῆς ... (references to similar texts at Bonitz (1870) 229a); *Cael.* 2.13 293b21–25 ἐνίοις δὲ δοκεῖ καὶ πλείω σώματα τοιαῦτα ἐνδέχασθαι φέρεσθαι περὶ τὸ μέσον, ἡμῖν ἄδηλα διὰ τὴν ἐπιπρόσθησιν τῆς γῆς. διὸ καὶ τὰς τῆς σελήνης ἐκλείψεις πλείους ἢ τὰς τοῦ ἡλίου γίνεσθαι φασιν· τῶν γὰρ φερομένων ἕκαστον ἀντιφράττειν αὐτήν, ἀλλ' οὐ μόνον τὴν γῆν (with a reference to the counter-earth in 293b20); also *ap.* Plu. *De facie* 932c = Aristotle fr. 738 Gigon. **Epīcurus** *ap.* D.L. 10.94, κένωσις τε σελήνης καὶ πάλιν πλήρωσις καὶ κατὰ στροφὴν τοῦ σώματος τοῦτου δύναται ἂν γίνεσθαι καὶ κατὰ σχηματισμοὺς ἀέρος ὁμοίως, ἔτι τε καὶ κατὰ προσθετήσεις καὶ κατὰ πάντας τρόπους, καθ' οὓς καὶ τὰ παρ' ἡμῖν φαινόμενα ἐκκαλεῖται εἰς τὰς τοῦτου τοῦ εἶδους ἀποδόσεις, ἐὰν μὴ τις τὸν μοναχὴν τρόπον κατηγαπηκῶς τοὺς ἄλλους κενῶς ἀποδοκμάζῃ, οὐ τεθεωρηκῶς τί δυνατόν ἀνθρώπῳ θεωρῆσαι καὶ τί ἀδύνατον, καὶ διὰ τοῦτο ἀδύνατα θεωρεῖν ἐπιθυμῶν; also *ap.* D.L. 10.96,



cited above in ch. 24. **Lucretius** 5.762–770, et cur terra queat lunam spoliare vicissim | limine et oppressum solem super ipsa tenere, | menstrua dum rigidas coni perlabitur umbras, | tempore eodem aliud nequeat succurrere lunae | corpus vel supra solis perlabier orbem, | quod radios interrumpat lumenque profusum? | et tamen ipsa suo si fulget luna nitore, | cur nequeat certa mundi languescere parte, | dum loca luminibus propriis inimica per exit? **Philo** *Prov.* 2.71, quum adsint multiplices causae adducendae ... eclipsis vero lunae latentis sub umbra terrae, quando tres illi globi ad invicem sunt ex diametro. **Seneca** *Nat.* 7.25.3, multaeque hodie sunt gentes quae facie tantum noverunt caelum, quae nondum sciunt cur luna deficiat, quare obumbretur. **Plutarch** *De facie* 932B–C. **Cleomedes** *Cael.* 2.6.56–57, ταῦτα οὖν πάντα σχεδὸν ὀφθαλμοφανῶς ἡμῖν παρίστησιν, ὅτι ἡ σελήνη μίαν ἔχει ταύτην τῆς ἐκλείψεως αἰτίαν, τὴν περιπτωσιν ... **Theon Smyrnaeus** *Expos.* 198.14–99.2, see above in ch. 28. **Alexander of Aphrodisias** *ap. Simp. in Cael.* 515.24. **Ps.Alexander** *Probl.* 2.46, Διὰ τί μᾶλλον καὶ συνεχέστερον σεληνιακαὶ ἐκλείψεις γίνονται τῶν ἡλιακῶν; **Basil** *in Hex.* 9.1 147.13. **Isidore of Pelusium** *Ep.* 2.273.

Aëtius *Placita* 2.30

Περὶ ἐμφάσεως αὐτῆς, διὰ τί γεώδης φαίνεται

WITNESSES

Ps.Plutarch 2.30, Eusebius 15.52, ps.Galen 71, Qusṭā Ibn Lūqā 2.30  
Stobaeus 1.26.4

ANALYSIS

1. The next chapter devoted to the moon concerns the question of its earthlike appearance, immortalized in Plutarch's treatise *Περὶ τοῦ ἐμφαινομένου προσώπου ἐν κύκλῳ τῆς σελήνης*. The question is peculiar to the moon, so this chapter finds no equivalent in the chapters on the stars or the sun. The formulation *διὰ τί* (in the longer title found in P) indicates a question seeking the cause (cf. ¶8 and the tradition of the *Problemata*). It is quite rare in A, only recurring three times in Book V (5.9, 14, 18).

2. The situation in terms of our sources is identical to that in the previous two chapters. It would appear that S has simply written out the chapter as he found it in his source, with a minimum of alteration. There are nine doxai:

- 1.26.4      Περὶ δὲ ἐμφάσεως αὐτῆς
- S1      τῶν Πυθαγορείων τινὲς μὲν, ὧν ἐστι Φιλόλαος, τὸ γεωφανὲς αὐτῆς εἶναι διὰ τὸ περιοικεῖσθαι τὴν σελήνην, καθάπερ τὴν παρ' ἡμῖν γῆν, ζώοις καὶ φυτοῖς μείζοσι καὶ καλλίοσιν. εἶναι γὰρ πεντεκαίδεκαπλάσια τὰ ἐπ' αὐτῆς ζῶα τῇ δυνάμει, μηδὲν περιττωματικὸν ἀποκρίνοντα, καὶ τὴν ἡμέραν τοσαύτην τῷ μήκει.
- S2      ἄλλοι δὲ τὴν ἐν τῇ σελήνῃ ἐμφασιν ἀνάκλασιν εἶναι τῆς πέραν τοῦ διακεκαυμένου κύκλου τῆς οἰκουμένης ὑφ' ἡμῶν θαλάττης.
- S3      Ἀναξαγόρας ἀνωμαλότητα συγκρίματος διὰ τὸ ψυχρομιγὲς ἅμα καὶ γεῶδες, τὰ μὲν ἐχούσης ὑψηλά, τὰ δὲ ταπεινά, τὰ δὲ κοῖλα. καὶ παραμεμῖχθαι τῷ πυροειδεῖ τὸ ζοφῶδες, ὧν τὸ πάθος ὑποφαίνει τὸ σκιερὸν· ὅθεν ψευδοφανῇ λέγεσθαι τὸν ἀστέρα.
- S4      Δημόκριτος ἀποσκίασμά τι τῶν ὑψηλῶν ἐν αὐτῇ μερῶν· ἀγκη γὰρ αὐτὴν ἔχειν καὶ νάπας.
- S5      Παρμενίδης διὰ τὸ παραμεμῖχθαι τῷ περὶ αὐτὴν πυρώδει τὸ ζοφῶδες, ὅθεν ψευδοφανῇ τὸν ἀστέρα καλεῖ.

- S6 οἱ Στωικοὶ διὰ τὸ ἀερομιγῆς τῆς οὐσίας μὴ εἶναι αὐτῆς ἀκήρατον  
τὸ σύγκριμα.
- S7 Ἀριστοτέλης μὴ εἶναι αὐτῆς ἀκήρατον τὸ σύγκριμα διὰ τὰ  
πρόσγεια ἀερώματα τοῦ αἰθέρος, ὃν προσαγορεύει σῶμα πέμπτον.
- S8 οἱ ἀπὸ τῶν μαθηματικῶν τὸ ἀνώμαλον συγκριτικὸν αἰτιῶνται.  
καθάπερ οὖν τῶν προσαναγαζομένων ὑπὸ τοῦ ἡλίου νεφῶν τὰ  
μὲν ἀραιότερα μέρη λαμπρότερα φαίνεσθαι, τὰ δὲ πυκνότερα  
ἀμυνορότερα, οὕτως καὶ τῆς σελήνης ἐοικνίας μὲν νεφελοειδεῖ  
πλήματι, προσαναγαζομένης δ' ὑπὸ τοῦ ἡλίου.
- S9 Ξενοφάνης τὸν μὲν ἥλιον χρήσιμον εἶναι πρὸς τὴν τοῦ κόσμου καὶ  
τὴν τῶν ἐν αὐτῷ ζώων γένεσιν τε καὶ διοίκησιν, τὴν δὲ σελήνην  
παρέλκειν.

None of the doxai in S rouse the suspicion that they derive from AD or that they were imported from elsewhere. These nine doxai thus almost certainly represent what stood in A.

3. As in the previous two chapters we can follow every move that P makes:

λ'. Περί ἐμφάσεως αὐτῆς, διὰ τί γεώδης φαίνεται

- P2.30.1 οἱ Πυθαγόρειοι γεώδη φαίνεσθαι τὴν σελήνην διὰ τὸ περιοικεῖσθαι  
αὐτὴν καθάπερ τὴν παρ' ἡμῖν γῆν μείζοσι ζώοις καὶ φυτοῖς  
καλλίουσιν· εἶναι γὰρ πεντεκαδεκαπλασίονα τὰ ἐπ' αὐτῆς ζῶα  
τῇ δυνάμει μηδὲν περιττωματικὸν ἀποκρίνοντα, καὶ τὴν ἡμέραν  
τοσαύτην τῷ μήκει.
- P2.30.2 Ἀναξαγόρας ἀνωμαλότητα [διὰ] τοῦ συγκρίματος διὰ τὸ  
ψυχρομιγῆς ἅμα καὶ γεῶδες· παραμεῖχθαι γὰρ τῷ πυροειδεῖ  
τὸ ζοφῶδες· ὅθεν ψευδοφαῖ λέγεσθαι τὸν ἀστέρα.
- P2.30.3 οἱ Στωικοὶ διὰ τὸ ἑτεροειδὲς τῆς οὐσίας μὴ εἶναι αὐτῆς ἀκήρατον  
τὸ σύγκριμα.

The first difference that strikes us is the longer title, confirmed by EQ and in a modified form by G.<sup>505</sup> Given this agreement, which is not often found in the tradition of P,<sup>506</sup> it is probable that the abbreviation is carried out in this instance by S.<sup>507</sup> But with regard to the chapter's contents it is P who abbreviates, retaining only three of the doxai:

<sup>505</sup> A slight divergence occurs in that EQ and one ms. of P link the two parts of the title with καί, whereas the remaining mss. of P merely juxtapose (cf. ¶9, ¶12). We give preference to the older tradition in this case.

<sup>506</sup> See our remarks at Vol. I:180–181 and in our chapter above on the work's title and pinax (ch. 2. *Titulus et pinax*).

<sup>507</sup> Cf. Mansfeld (2000b) 180, who hesitates because the additional part of the title seems based on the phrasing of the first lemma in P.

- (i) S's first doxa is written out in full, except that the name-label is simplified (τῶν Πυθαγορείων τινὲς μὲν, ὧν ἔστι Φιλόλαος becomes οἱ Πυθαγόρειοι). At the beginning of the lemma it is difficult to decide between S's τὸ γεωφανὲς αὐτῆς and P's γεώδη φαίνεσθαι. We retain the former, because P's words are a mere repetition of the title, which A generally avoids.<sup>508</sup>
- (ii) The third doxa attributed to Anaxagoras is written out, except that the information about the unevenness of its surface is deleted. On the different readings ψευδοφανῇ and ψευδοφαῇ see further below at n. 514.
- (iii) Of the remaining doxai only the Stoic view (S6) is retained in an unaltered form. Here the reading ἀερομιγές, found in EQ as well as S, is clearly to be preferred to P's ἐτεροειδές.

Regrettably no assistance is gained from T or Ach in determining the original text of this chapter. On the texts in Philo (*Somn.* 1.22, 1.145) see below sect. 6.

4. The subject of the chapter is closely related to two earlier chapters, ¶25 on the οὐσία of the moon and ¶28 on its illuminations. It is noteworthy that almost all the name-labels already occur in those chapters (Pythagoreans replace Pythagoras, only 'some astronomers' are new, but they occur in ¶29). It is at once apparent that the basic type A diaeresis in ¶25 between the view that the moon is basically earthy and that it is basically ethereal (fire with or without air mixed) exerts a strong influence on this chapter as well. The first four doxai correlate to an earthy οὐσία, the next four to a mixture of ether–fire–air. Only the very final view is exceptional and seems quite out of place.<sup>509</sup> In ¶25 A began with the ethereal view, and finished with the earthy. Here the order is reversed, no doubt because the term γεώδης occurs in the actual title of the chapter. As so often there is a general movement in the chapter, this time from low to high, i.e. from the moon being as little different from the earth (with animals and plants on it) to its being an impure conglomerate of the Aristotelian quintessence (hence the arrow in the diagram below). The diaeresis that determines the structure of ¶28—between the moon's own light and reflected light from the sun—plays a lesser role in this chapter, but is relevant to the second part of the main division, as we shall note below. It is interesting to observe that P, though retaining only 3 doxai, does retain the basic diaeretic

<sup>508</sup> Cf. *ibid.* 181, who suggests the word may have been chosen on analogy with the equally rare term ψευδοφάνης used twice elsewhere in the chapter. But the placement of αὐτῆς preceding τὴν σελήνην is not good Greek style.

<sup>509</sup> Compare our comments on the similarly eccentric final doxa in the previous chapter, ch. 28 sect. 6.

structure. Indeed, by placing the Anaxagorean doxa in between that of the Pythagoreans and of the Stoa, he produces a type B διαίρεσις, because the text mentions both earth-like and fire-like features (but this text is problematic, as we shall see directly).

5. We turn now to some of the problems posed by individual lemmata.

(1) The Pythagorean doxa at the beginning makes the moon as earth-like as is possible.<sup>510</sup> The presence of huge animals and plants is not meant to explain the earth-like appearance directly, but rather to be a consequence of the moon being very like the earth (cf. the doxai of Anaxagoras–Democritus at 2.25.10\* and in this chapter).

(2) The next doxa is related to the first in a μὲν ... δέ construction. It raises the question of whether the anonymously designated ἄλλοι represent a second group of Pythagoreans, as in the previous chapter, or an independent group. Diels, perhaps influenced by the fact that exactly the same theory is attributed to the Peripatetic Clearchus by Plutarch at *De facie* 921A, thought not and omitted the doxa from the collection in *VS*.<sup>511</sup> The reflection theory, however, recalls 2.25.15\*, where the moon according to Pythagoras is a reflecting body (glass as a mixture of earth and water). The same views are given anonymously in Lucian and Simplicius (texts below; note how the latter mentions earth and mountains in addition to the ocean).

(3) The doxa attributed to Anaxagoras (S3) gives rise to various problems. That the moon has an anomalous surface with peaks and gullies is consistent with 2.25.10. The notion of ψυχρομυγές is perhaps based on an analogy with the irregular surface of solidified lava. The problem lies in the second half of the doxa which is verbally almost identical to the Parmenidean lemma two doxai further down (only the words ὧν τὸ πάθος ὑποφαίνει τὸ σκιερὸν<sup>512</sup>—deleted by P—and the explicit

<sup>510</sup> On this text see Huffman (1993) 270–276, who concludes that it probably contains material that goes back to Philolaus.

<sup>511</sup> Huffman appears to agree implicitly, since he does not cite or discuss these lines. Cf. also Wehrli (1944–1978) 3.80, who thinks a subgroup of Pythagoreans is meant and concludes that Clearchus, like Heraclides, shows Pythagoreanizing tendencies.

<sup>512</sup> Guthrie (1962–1981) 2.307 takes these words to refer to what is observed during occultation, comparing Plu. *De facie* 933F. But the unattributed view in 935C favours a different interpretation, i.e. that the darkness caused by the admixture of water and air results in the phenomenon of the shadow on the face of the moon. If this is right, then the text will need to be altered (the ὧν is difficult in any case). One might suggest ὥστε τὸ πάθος ὑποφαίνειν τὸ σκιερὸν (cf. the same construction at 2.24.4\*).

attribution of the word ψευδοφανῆ to the poet differ). The easiest solution is to postulate a doublet. But which lemma contains the duplicate? Diels in his monograph on Parmenides' poem argued strongly for the priority of the Anaxagorean lemma, and hence regards the attribution of the rare term ψευδοφανῆ to Parmenides as false.<sup>513</sup> But this word is surely a *vox poetica* and fits nicely into a hexameter.<sup>514</sup> Moreover, too many reasons are given in this lemma. It thus makes sense to reserve the second part for Parmenides. We cannot pursue this question further.<sup>515</sup> The error will most likely have been made by A.

(4) The reason given for Democritus in the fourth doxa is the one that one would have expected to obtain for Anaxagoras. The phrase ἄγκη καὶ νάπαι recurs in an extract at Philo *Somn.* 1.22 but is used generally of the heavenly bodies and not just for the moon.<sup>516</sup> The doxa is in fact no more than a supplement to that of Anaxagoras; cf. the joint name-label at 2.25.10\*.

(5) The Parmenidean doxa forms the transition to the remaining doxai, which no longer stress the role of the earthy component. From the doxa itself it is not clear what causes the 'dark' element in the fiery nature of the moon. If the doxa on the τάξις of the cosmos at 2.7.4\* is adduced, it would appear that τὸ ζοφῶδες is the air, which explains the position in the sequence. In fact it is quite similar to the two doxai that now follow. The second part of the doxa would be more at home in 2.28.<sup>517</sup>

(6) The Stoic and Aristotelian doxai (S6–7) are rather similar, both involving the admixture of air, in the one case to ethereal fire (not expressly stated), in the other to the ether as fifth element. The assumption that the moon produces its own light is not made explicit, but comparison with 2.28.2–3 makes this probable.<sup>518</sup>

<sup>513</sup> Diels (1897) 110–112; cf. also Coxon (1986) 245–246.

<sup>514</sup> S reads ψευδοφανῆ in both doxai, but in the case of the former the tradition of P is divided between ψευδοφανῆ and ψευδοφαῆ. LSJ regards both adjectives as synonyms meaning 'with false light', but the former adjective must surely mean 'falsely appearing'; cf. adjectives such as φωτοφανής, σκιοφανής etc. As noted above in n. 472, a doxa in D.L. attributes the view that the moon is ψευδοφαῆ to Anaximander. It may well be impossible to decide between these readings with certainty, but we side with S. See also our comments in Part I sect. 18 at n. 448.

<sup>515</sup> As Zeller (1920–1923) 1.715 notes, the problem is that A gives far too many differing doxai on Parmenidean cosmology (not only here and at 2.25.2\* and 2.28.5\*, but also 2.7.4\* and the problematic lemma at 2.20.15\*).

<sup>516</sup> It was missed by Wendland (1897) 1074, but pointed out by Colson in his LCL translation *ad loc.*

<sup>517</sup> As noted in Part I sect. 18 at n. 449.

<sup>518</sup> One might contrast the view at Pliny *NH* 2.46 (text below), where the spotted

(7) The explanation of the astronomers (S8) also involves irregularity of mixture (τὸ ἀνώμαλον συγκροτικόν), as in earlier doxai, but in this case the dark patches are explicitly related to the reflected light of the sun, i.e. the dichotomy of ¶28 reappears by way of a second diaeresis.

(8) The final doxa (S9) has no direct relation to the theme of the chapter. On the four stray lemmata involving comparison between sun and moon, see our comments at ch. 28 sect. 5. Note that the lemma at 2.24.8\* is also attributed to Xenophanes.

6. Various sources contain traces of doxographical discussion.

(a) At Philo *Somn.* 1.145 (text below) the Stoic and Aristotelian doxai are easily recognized, even if Philo speaks of ἄκρατον and not ἀκήρατον (Von Arnim claims the text for the Stoa at *SVF* 2.674; note that the term πύλημα is found in the astronomers' doxa = S8). As in the case of other Philonic texts, a link to shared earlier doxographical traditions may be surmised.<sup>519</sup>

(b) Much more extensive material is found in Plutarch's treatise *De facie*. The opening words of the treatise as preserved (the beginning is lost) are very interesting and relevant to our research (920B–C). The speaker Sulla asks whether the conversation should revert to current and well-known δόξαι περὶ τοῦ προσώπου τῆς σελήνης. Plutarch replies that in ἐν δυσθεωρήτοις καὶ ἀπόροις σκέψεσιν, when οἱ κοινοὶ καὶ ἔνδοξοι καὶ συνήθεις λόγοι do not persuade, one should try those that are more out of the way (ἀτοπώτεροι), testing the views of the ancients and use them to bring the truth to the test. This seems like a covert reference to the kind of more unusual Presocratic material that we find in A.<sup>520</sup> Going through the work, we find that the following relevant doxai are brought forward:

- (i) As a πάθος τῆς ὀψεως (920C), i.e. a view in the eye of the beholder not found in A (not identified by Cherniss; very likely of sceptical provenance, but cf. perhaps the doxa πρὸς τὴν φαντασίαν in the next chapter).
- (ii) The face as εἰκόνες ἐσοπτρικαὶ καὶ εἰδῶλα of the great sea (920F), i.e. § 2 in A. Note how in his refutation Plutarch invokes the opposition between ἐμβριθὲς σῶμα καὶ στερεόν and ἄστρον αἰθέριον καὶ φωσφόρον (921E), precisely the διαφωνία we have discerned behind A's arrangement of

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patches are caused by dirt from the earth taken up in the moisture that the moon drinks (on the basis of the theory of the moist exhalation).

<sup>519</sup> Cf. Wendland (1897) 1075, who postulates the source as the Dielsian *Vetusta placita*.

<sup>520</sup> On Plutarch's use of the term δόξα see also our comments in Part I sect. 16 at n. 407.

- doxai. Clearchus as a Peripatetic should hold that the moon is ethereal, whereas in order to reflect it has to be solid and earthy.
- (iii) The Stoic doxa (thus called *expressis verbis*) is next given, first in neutral terms (921F, the moon as ἀέρος μῖγμα καὶ μαλακοῦ πυρός receiving its ἔμφασις μορφοειδής through the blackening of the air), then tendentiously (922A, σύμμικτα καὶ φύραμα ἀέρος ζοφεροῦ καὶ πυρός ἀνθρακώδους ...). We note too the Empedoclean doxa on the substance of the moon at 922C, corresponding to 2.25.6\*.
  - (iv) The doxa that the moon is earthy and like the earth has βάθῃ καὶ κοιλότητες is explicitly referred to in the refutation of the Stoic view (922D). This is the view espoused by Plutarch, and is alluded to at various points (cf. 934F–935C). Note especially 935C: ἐκείνην [sc. σελήνην] ἀνεπύχθαι βάθει μεγάλῳ καὶ ῥήξεσιν ὕδωρ ἢ ζοφερόν ἀέρα περιέχουσιν. This position very much recalls §§ 3–4 in A.
  - (v) Finally we should not overlook Plutarch's discussion of the question of whether there are living beings on the moon (937D), which recalls the first Pythagorean doxa in A (as noted by Cherniss in his note *ad loc.*). The twelve summers a year at 938B is, we imagine, another way of describing the 'days' half a month long (not observed by Cherniss or Görgemanns).

Plutarch is an intelligent and independent author, by no means easy to pin down. The reciprocal light that he sheds on the doxographical tradition and that it sheds on him deserves a separate study.<sup>521</sup> In addition to the *rapprochements* noted above, two further observations should be made: (1) he argues against the various doxai, a procedure that is seldom found in the Aëtian *Placita*,<sup>522</sup> (2) although he appears—surprisingly as a Platonist—to espouse the earthy view (cf. 935C, 940B), in fact in the *dénouement* of the dialogue he cleverly draws a parallel between the intermediate position of soul and that of the moon which is like a ἄστρου σύγκρομα καὶ γῆς (943E, cf. 945D σελήνη τῶν ἄνω καὶ κάτω σύμμικτα καὶ μετακράσματα ὑπὸ τοῦ θεοῦ γέγονε, virtually the last words of the treatise). This amounts to a *compromise* between the two poles of the diaphonia as found in the *Placita*. The procedure is clearly reminiscent of the doxographical practice that we find in the type B diaeresis.

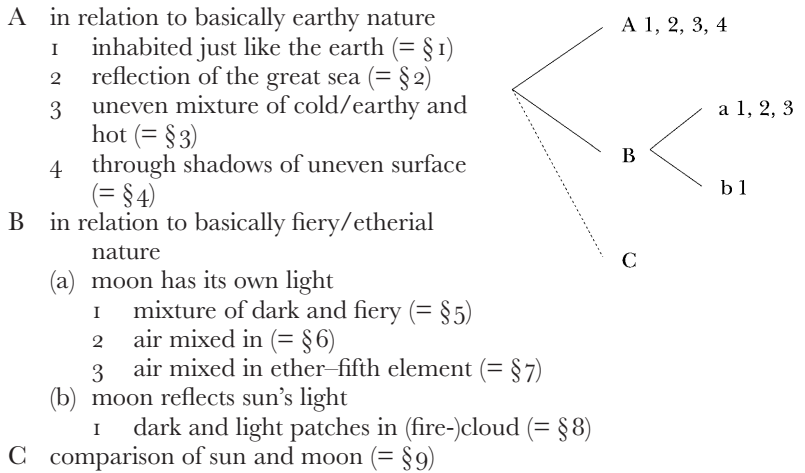
<sup>521</sup> Görgemanns asserts (1970) 69: 'In der Doxographie ist das Thema jedenfalls schon früher berücksichtigt worden (Aetius II 30); doch sind keine näheren Beziehungen zu Plutarch erkennbar.' In the light of our observations this statement cannot be maintained. Plutarch knows the doxographical tradition well, and is influenced by both its practices and its content.

<sup>522</sup> But note that the verb ἀμαρτάνειν used in 940B is precisely that used by A on the rare occasions that he ventures an adverse opinion on a doxa; cf. A at P 1.2, 1.3.2 (twice), 1.3.3, 1.7.1.



(c) In his introduction to Plutarch's treatise Cherniss also reports on the treatise of Ibn 'Alī al-Ḥasan (965–1039).<sup>523</sup> Its first pages are devoted to a presentation of various anonymous doxai, followed by a refutation (i.e. contrary to the practice of A). The author makes quite clear that he has little respect for these views. A number of A's doxai reappear (§§ 2, 3–4, 8), though in a reformulated form (see extracts below).

STRUCTURE (see above sect. 4)



## RECONSTRUCTED TEXT

λ'. Περί ἐμφάσεως αὐτῆς καὶ διὰ τί γεώδης φαίνεται<sup>1</sup>

- 1 τῶν Πυθαγορείων τινὲς μὲν, ὧν ἔστι Φιλόλαος<sup>2</sup>, τὸ γεωφανὲς  
αὐτῆς εἶναι<sup>3</sup> διὰ τὸ περιοικεῖσθαι τὴν σελήνην<sup>4</sup> καθάπερ τὴν  
παρ' ἡμῖν γῆν μείζουσι ζώοις καὶ φυτοῖς καλλίοσιν· εἶναι γὰρ  
πεντεκαίδεκαπλασίονα τὰ ἐπ' αὐτῆς ῥῶα τῇ δυνάμει μηδὲν  
περιπτωματικὸν ἀποκρίνοντα, καὶ τὴν ἡμέραν τοσαύτην τῷ μήκει.  
2 ἄλλοι δὲ τὴν ἐν τῇ σελήνῃ ἔμφασιν ἀνάκλασιν εἶναι τῆς πέραν τοῦ  
διακεκαυμένου κύκλου τῆς οἰκουμένης ὑφ' ἡμῶν θαλάττης.  
3 Ἀναξαγόρας ἀνωμαλότητα τοῦ συγκρόματος<sup>5</sup> διὰ τὸ ψυχρομιγὲς<sup>6</sup>  
ἄμα καὶ γεῶδες, τὰ μὲν ἐχούσης ὑψηλά, τὰ δὲ ταπεινά, τὰ δὲ

<sup>523</sup> Cherniss (1957) 19, who refers to the translation of Schoy (1925). Astonishingly Daiber does not report on this.

- κοῖλα· καί παραμεμῖχθαι<sup>7</sup> τῷ πυροειδεῖ τὸ ζοφῶδες, ὧν τὸ πάθος  
 ὑποφαίνει τὸ σκιερὸν<sup>8</sup>· ὅθεν ψευδοφανῇ<sup>9</sup> λέγεσθαι τὸν ἀστέρα.
- 4 Δημόκριτος ἀποσκιάσματα<sup>10</sup> τῶν ὑψηλῶν ἐν αὐτῇ μερῶν· ἄγκη γὰρ  
 αὐτὴν ἔχειν καὶ νάπας.
- 5 Παρμενίδης διὰ τὸ παραμεμῖχθαι τῷ περὶ αὐτὴν πυρώδει τὸ  
 ζοφῶδες· ὅθεν ψευδοφανῇ<sup>11</sup> λέγεσθαι τὸν ἀστέρα.
- 6 οἱ Στωικοὶ διὰ τὸ ἀερομιγές<sup>12</sup> τῆς οὐσίας μὴ εἶναι αὐτῆς ἀκήρατον  
 τὸ σύγκρομα.
- 7 Ἀριστοτέλης μὴ εἶναι αὐτῆς ἀκήρατον τὸ σύγκρομα διὰ τὰ  
 πρὸς γαίᾳ ἀερώματα τοῦ αἰθέρος, ὃν προσαγορεύει σῶμα πέμπτον.
- 8 οἱ ἀπὸ τῶν μαθηματικῶν τὸ ἀνώμαλον συγκριτικὸν αἰτιῶνται.  
 καθάπερ οὖν τῶν προσαναγαζομένων ὑπὸ τοῦ ἡλίου νεφῶν τὰ  
 μὲν ἀραιότερα μέρη λαμπρότερα φαίνεσθαι, τὰ δὲ πυκνότερα  
 ἀμαυρότερα, οὕτως καὶ τῆς σελήνης ἐοικυίας μὲν νεφελοειδεῖ  
 πιλήματι, προσαναγαζομένης δ' ὑπὸ τοῦ ἡλίου.
- 9 Ξενοφάνης τὸν μὲν ἥλιον χρήσιμον εἶναι πρὸς τὴν τοῦ κόσμου καὶ  
 τὴν τῶν ἐν αὐτῷ ζῶων γένεσιν τε καὶ διοίκησιν, τὴν δὲ σελήνην  
 παρέλκειν.

- 1 EQP<sup>2</sup>, Περί ἐμφάσεως αὐτῆς, διὰ τί γεώδης φαίνεται P<sup>1</sup>, Περί δὲ ἐμφάσεως αὐτῆς  
 S, διὰ τί γεώδης φαίνεται ἡ σελήνη G
- 2 S, οἱ Πυθαγόρειοι Φ
- 3 τὸ γεωφανές αὐτῆς εἶναι S, γεώδη φαίνεσθαι τὴν σελήνην P
- 4 τὴν σελήνην S, αὐτὴν P
- 5 διὰ τοῦ συγκροίματος P, συγκροίματος S
- 6 ψυχροειδές E
- 7 παραμεμῖχθαι γὰρ PE
- 8 ὧν τὸ πάθος ὑποφαίνει τὸ σκιερὸν om. Φ
- 9 SP<sup>2</sup>, ψευδοφαῖ P<sup>1</sup>EQ malunt Mau Lachenaud
- 10 ἀποσκιάσμα τι Canter, accep. Wachsmuth
- 11 S, ψευδοφαῖ emend. Meineke
- 12 ἀερομιγές SEQ, ἑτεροειδές P

§1 44A20 DK; §2–; §3 59A77 DK; §4 68A90 DK; §5 28B21 DK; §6 *SIF* 2.669; §7  
 T19 Gigon; §8–; §9 21A42 DK

30. On its appearance and why it appears (to be) earthy

- 1 Some of the Pythagoreans, of whom Philolaus is one, declare that its  
 earthy appearance is caused by the fact that the moon is inhabited, just  
 like our earth, (but) with animals and plants that are larger and more  
 beautiful. For (they say that) the animals on it are fifteen-fold in power  
 and do not discharge any excrement, and that the day is the same in  
 length (i.e. fifteen-fold).
- 2 But others (declare that) the appearance in the moon is a reflection of  
 the sea beyond the circle of the Torrid zone of our inhabited world.

- 3 Anaxagoras (declares that it is caused by) unevenness of its composition on account of cold being mixed in together with the earthy (component), the moon having some parts that are high, others that are low, and others that are hollow. Moreover, (he declares that) the dark (component) has been mixed in with the fire-like (component), the effect of which causes the shadowy (colouring) to appear; for this reason the heavenly body is called ‘falsely appearing’.
- 4 Democritus (declares that it is caused by) the shadow effects of the high areas in it; for it has glens and vales.
- 5 Parmenides (declares that it occurs) on account of the dark (component) having been mixed in with the fire-like (component) in it; for this reason the heavenly body is called ‘falsely appearing’.
- 6 The Stoics (declare that) on account of the air mixed in the substance its composition is not unblemished.
- 7 Aristotle (declares that) its composition is not unblemished because the ether, which he calls the fifth body, becomes aerated close to the earth.
- 8 Some astronomers regard its compositional unevenness as the cause. Just as in the case of clouds illuminated by the sun the thinner parts are brighter and the thicker parts are darker, so it happens in the case of the moon, which resembles a cloud-like compressed body and is illuminated by the sun.
- 9 Xenophanes (declares that) the sun is useful for the generation and administration of the cosmos and the living beings in it, but the moon is redundant.

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Philo** *Somn.* 1.145 (see also first part of text cited in ch. 25), καὶ τό γε ἐμφαινόμενον αὐτῇ μέλαν, ὃ καλοῦσί τινες πρόσωπόν, οὐδὲν ἄλλο εἶναι ἢ τὸν ἀναμειγμένον ἄερα, ὃς κατὰ φύσιν μέλας ὢν ἄχρῃς αὐτῆς τείνεται (imitated at **Johannes Lydus** *Mens.* 3.12 54.10 Wuensch). **Pliny** *NH* 2.46, sidera vero haut dubie humore terreno pasci, quia dimidio orbe nonnumquam maculosa cernatur, scilicet nondum suppetente ad hauriendum ultra iusta vi—maculas enim non aliud esse quam terrae raptas cum humore sordes. **Plutarch** *De facie quae in orbe lunae apparet*, *passim* and esp. 920B—C, ἀλλ’ εἰ δεῖ τι πρὸς τὰς ἀνὰ χεῖρα ταύτας καὶ διὰ στόματος πᾶσι δόξας περὶ τοῦ προσώπου τῆς σελήνης προσανακρούσασθαι ... ἀναγκαῖον ἐν δυσθεωρήτοις καὶ ἀπόροις σκέψεσιν, ὅταν οἱ κοινοὶ καὶ ἔνδοξοι καὶ συνήθεις λόγοι μὴ πείθωσι, πειρᾶσθαι τῶν ἀτοπωτέρων καὶ μὴ καταφρονεῖν ἀλλ’ ἐπάδειν ἀτεχνῶς ἑαυτοῖς τὰ τῶν παλαιῶν καὶ διὰ πάντων τάληθές ἐξελέγγχειν. See further references in the text at sect. 6 above. **Lucian** *Icar.* 20 (see also ch. 25), καὶ οἱ μὲν κατοικεῖσθαι μέ φασιν, οἱ δὲ κατόπτρου δίκην ἐπικρέμασθαι τῇ θαλάττῃ, οἱ δὲ ὅ τι ἂν ἕκαστος ἐπινοήσῃ τοῦτό μοι προσάπτουσι. **Simplicius** in *Cael.* 457.9 Heiberg (on 290a27), ἀλλ’ εἰ μὲν τὸ ἐμφαινόμενον πρόσωπον διαφορὰ τις οὐσιώδης ἐστὶ τοῦ σεληνιακοῦ σώματος ἢ παραδειγματικῶς περιέχοντος τὸ πολυειδές καὶ διάφορον τῆς γενέσεως, ὡς Ἰάμβλιχός φησιν, ἢ διὰ τὸ μεσότης εἶναι τῶν οὐρανίων καὶ τῶν ὑπὸ σελήνην τὸ μὲν εὐφώτιστον ἔχει,

τὸ δὲ σκιερώτερον κατ' οὐσίαν, ὥς ἄλλοις ἀρέσκει, ἰσχυρὸν δοκεῖ πρὸς ἀπόδειξιν τὸ εἰρημένον (i.e. that the moon, and by analogy the other heavenly bodies, do not roll): πῶς γὰρ τοῦ ὅλου σώματος κυλιομένου τὴν αὐτὴν ἐκείνο θέσιν ἐφύλαττε συνεχὲς ὄν πρὸς τὸ ὅλον; εἰ δέ, ὥς τινες λέγουσιν, ἔμφασίς τις ἔστιν ὥς ἐν κατόπτρῳ ἦτοι τῆς γῆς ἢ τῆς θαλάσσης ἢ τῶν ὁρῶν ... εἰ μέντοι ἀπόρροια τῶν ὑπὸ σελήνην ἀναθέουσαι ἄλλαι ἀπ' ἄλλων αἰεὶ περὶ τὸ στιλπνὸν τῆς σελήνης τοιαύτην λαμβάνουσι σύστασιν, ὥς καὶ ἐν τοῖς κατόπτροις εἰδώλων ἔμφασιν συνίστασθαι λέγουσιν οἱ τινες. **Ibn 'Alī al-Ḥasan** *Über die Natur des Spuren (Flecken), die man auf der Oberfläche des Mondes sieht* 1–3 Schoy, 'Wenn man diese Zeichen der Oberfläche aufmerksam betrachtet und beobachtet, so findet man sie immerfort von derselben Beschaffenheit, und keinerlei Veränderung zeigt sich an ihnen ... Abergläubische und nicht ernst zu nehmende Menschen haben ihre eigene und abweichende Meinung darüber. Gewisse Leute halten dafür, daß die Spuren dem Mondkörper selbst angehören, andere glauben, daß sie sich außerhalb desselben, nämlich zwischen dem Mondkörper und dem Gesicht des Beobachters, befänden, wieder andere glauben, daß sich ihnen ein umgekehrtes Bild darbiete, weil die Mondoberfläche glatt und reflektierend sei ... So gibt es denn auch Leute, die behaupten, daß sie die Figur der irdischen Meere im Spiegelbilde erblicken würden, andere sagen, es seien die Spuren die Bilder der Berge und Gebirge unserer Erde, wieder andere glauben, das Gesehene sei eine Figur, die von den auf die Erde fallenden Reflektionsstrahlen aus ihr ausgeschnitten würde ... Aber alle diese bis jetzt vorgetragenen Meinungen sind unzutreffend und daher wertlos, und wir schicken uns jetzt an, das Irrige all dieser Ansichten darzutun. Danach studieren wir die wahre Natur der Spuren.'

Aëtius *Placita* 2.31

Περὶ τῶν ἀποστημάτων τῆς σελήνης

WITNESSES

Ps.Plutarch 2.31, Eusebius 15.53, ps.Galen 72, Qusṭā Ibn Lūqā 2.31,  
Scholion to Ptolemy *Almagest* 5.1, cf. Lydus *De mensibus* 3.12  
Stobaeus 1.26.5  
Theodoret 4.24, cf. 1.96

ANALYSIS

1. The final chapter in the sequence on the moon gives various doxai on its distance from the sun and the earth. As the title preserved in the mss. of P indicates,<sup>524</sup> it poses a question in the category of quantity; cf. earlier ch. 26 on the moon's size (also ch. 21 on the sun, P 4.4 on the parts of the soul, 4.10 on the number of the senses etc.). The reconstruction of the chapter is not a problem, but its contents are heterogeneous and give rise to various difficulties. Fortunately we can draw on some additional research which has uncovered some interesting new evidence and tackled some of the difficulties that the chapter poses.<sup>525</sup>

2. As in the previous three chapters every indication points to the conclusion that S writes out the chapter in its entirety as he found it in A. There are five doxai:

- |        |   |
|--------|---|
| 1.26.5 | Περὶ δὲ τῶν ἀποστημάτων   |
| S1     | Ἐμπεδοκλῆς διπλάσιον ἀπέχειν τῆς σελήνης ἀπὸ ⟨τῆς⟩ γῆς ἢ περ ἀπὸ τοῦ ἡλίου.   |
| S2     | οἱ δὲ ἀπὸ τῶν μαθηματικῶν ὀκτωκαιδεκαπλάσιον.   |
| S3     | Ἐρατοσθένης τὸν ἥλιον ἀπέχειν ἀπὸ τῆς γῆς σταδίων μυριάδας [μυριάδων] τετρακοσίας καὶ στάδια ὀκτάκις μύρια· τὴν δὲ σελήνην ἀπέχειν ἀπὸ τῆς γῆς μυριάδας ἑβδομήκοντα ὀκτὼ σταδίων.                                     |
| S4     | Ἐμπεδοκλῆς τοῦ ὕψους τοῦ ἀπὸ τῆς γῆς εἰς τὸν οὐρανόν, ἣτις ἐστὶν ἂφ' ἡμῶν ἀνάτασις, πλείονα εἶναι τὴν κατὰ τὸ πλάτος διάστασιν, κατὰ τοῦτο τοῦ οὐρανοῦ μᾶλλον ἀναπεπταμένου διὰ τὸ ὥψ παραπλησίως τὸν κόσμον κεῖσθαι. |

<sup>524</sup> Further discussed below in sect. 5.

<sup>525</sup> Mansfeld (2000b).

- S5            Βόηθος δὲ πρὸς τὴν φαντασίαν δέχεται τὸ ἀναπεπταμένον, οὐ  
κατὰ τὴν ὑπόστασιν.

From the formal point of view none of the five doxai rouse suspicion. It is unlikely that they come from AD or another source. We note, however, that the fourth doxa, to which the fifth is linked, appears to indicate a different subject which is not directly related to the moon, i.e. the height of the heaven and the related shape of the cosmos (cf. ¶2).

3. Before we can analyse S's evidence, however, we need to compare what P and his tradition tell us about this chapter. Here there is no shortage of evidence. There are no less than five complete witnesses, including a scholion to Ptolemy's *Almagest* which is one of the earliest manuscript witnesses to the text of P.<sup>526</sup> The evidence in Lydus only relates to the third doxa on Eratosthenes.<sup>527</sup> The text in the mss. of P is:

λα'. Περὶ ἀποστημάτων τῆς σελήνης, πόσον ἀφέστηκε τοῦ ἡλίου

- P2.31.1 Ἐμπεδοκλῆς διπλάσιον ἀπέχειν τὴν σελήνην ἀπὸ τοῦ ἡλίου ἥπερ  
ἀπὸ τῆς γῆς.  
P2.31.2 οἱ ἀπὸ τῶν μαθηματικῶν ὀκτωκαιδεκαπλάσιον.  
P2.31.3 Ἐρατοσθένης τὸν ἥλιον ἀπέχειν τῆς γῆς σταδίων μυριάδας  
(τετρακοσίας καὶ ὀκτακισμυρίας, τὴν δὲ σελήνην ἀπέχειν τῆς  
γῆς μυριάδας) ἑβδομήκοντα ὀκτώ.

It is immediately plain that only the first three doxai in S are retained. Though apparently unabbreviated, there are various textual differences and difficulties. Rather than examine the tradition of P in isolation, it will be better first to survey the remaining scanty evidence and then treat the text of the chapter synoptically.

<sup>526</sup> It is earlier than the manuscripts of P; cf. Mansfeld (2000b) 177. The text as printed by Heiberg (1898–1903) 1.350 in the apparatus to the text is as follows: Ἐμπεδοκλῆς διπλάσιον ἀπέχειν τὴν ☾ ἀπὸ τῆς γῆς ἐδόξαζεν, οἱ δὲ ἀπὸ τῶν μαθηματικῶν ἀκριβέστερον ἐπιβάλλοντες ὀκτωκαιδεκαπλάσιον:—Ἐρατοσθένης τὸν ἥλιον ἀπέχειν σταδίων ἀπὸ τῆς γῆς μυριάδας ἑ καὶ ὀκτακισμυρίων : ~ τὴν δὲ σελήνην ἀπέχειν τῆς γῆς μυριάδων ἑβδομήκοντα ὀκτώ σταδίων (there are some minor variations in the mss.). This evidence was overlooked in Vol. 1.

<sup>527</sup> *De mensibus* 3.12 54.6–10 Wuensch: ἀφεστάναι δὲ λόγος ἀπὸ τῆς γῆς κατὰ τὸν Ἐρατοσθένην τὴν μὲν σελήνην σταδίων μυριάδας ἑβδομήκοντα ὀκτώ, τὸν δὲ ἥλιον τετρακοσίας καὶ ὀκτάκισμυρίας.

4. T briefly refers to our chapter in a continuation of the passage summarizing further topics on the moon which we cited in ch. 27:

*CAG* 4.24, 106.14–20

καὶ τί δεῖ λέγειν, ὅσα ἐκείνοι σχημάτων πέρι καὶ ἐκλείψεων καὶ διαστημάτων μυθολογοῦσιν, οὐ γὰρ μόνον ὅσον ἀλλήλων διεστήκασιν, λέγουσιν, ἀλλὰ καὶ ὅσον τῆς γῆς ἀφεστήκασιν· καὶ τετρακοσίας ἀριθμοῦσι καὶ μέντοι καὶ πλείους σταδίων μυριάδας, τὰς μὲν ἀπὸ γῆς μέχρι σελήνης, τὰς δὲ ἐκείθεν μέχρι ἡλίου·

Continuing in a skeptical vein (since what is the value of such speculations?), T first mentions the subject of ‘distances’, then gives a summary of the chapter, based not only on its title, but also on the content of at least the first and third doxai, and then uses a simplified version of the third doxa to show the absurdity of the exercise.

Earlier in his book T had made another intriguing reference to the question of cosmic distances in a passage preceding the section on the sun’s size analysed in ch. 21:

*CAG* 1.96, 27.17–25

οὕτω τοῖς ἀστρονόμοις οἱ φοιτῶντες πιστεύουσιν, καὶ τῶν ἄστρον τὸν ἀριθμὸν λέγουσι καὶ τὰ διαστήματα μετροῦσιν, οἷς ἀφεστήκασιν ἀλλήλων, καὶ πόσαις μυριάσι σταδίων τῆς γῆς ἀφέστηκεν ὁ ὁρώμενος οὐρανός· καὶ πολλῆς οὕσης ἐν τῷ μέτρῳ διαφωνίας, καὶ τῶν μὲν τετρακοσίας καὶ ἑβδομήκοντα σταδίων μυριάδας εἶναι λεγόντων, τῶν δὲ ἐλάττους, τῶν δὲ πολλῶ πλείους, ὁμῶς πείθονται οἱ φοιτηταὶ τοῖς διδασκάλοις καὶ τοῖς παρ’ αὐτῶν λεγομένοις πιστεύουσιν.

Our apologist seems to have above all the astronomers in mind here. He refers to astronomical subjects in very general terms, e.g. the number of the heavenly bodies (or planets?) and their distances. The single more specific subject which he mentions, the distance from the earth to the ‘visible heaven’, is not found in A as such. Could this be a reference to a separate chapter in A not found in either P or S, i.e. Περί τῶν ἀποστημάτων τοῦ οὐρανοῦ, to be placed after 2.12 or as a complement to 2.15–16?<sup>528</sup> But the specific number given here, 470 myriad of stades, is suspiciously like the numbers in 2.30. Moreover, as we shall see below, the final two doxai in S discuss the distance of the earth from heaven (although no numbers are given). We think it preferable to follow Raeder *ad loc.* in seeing it as an adaptation of 2.31 (it is not cited in Diels).

<sup>528</sup> See Vol. I:284–288 (where this passage is not discussed) and our comments above on the critique of M. Frede at n. 451.

The subject of cosmic distances is not touched on by Ach. In a very compact distillation of similar material found in a Paris ms. (on these scholia see Vol. I:306), §19 is entitled *Περὶ ἀποστάσεως τοῦ οὐρανοῦ ἀπὸ τῆς γῆς* (319.13 Maass ~ 28.3 Martin). Although the contents of the chapter bear no relation to our chapter, the title will be of value when we look at the final two doxai below.

5. In determining the text and structure of the chapter, the first problem we encounter relates to its title. The following variants are found:

- S *Περὶ δὲ τῶν ἀποστημάτων*
- P *Περὶ ἀποστημάτων τῆς σελήνης, πόσον ἀφέστηκε τοῦ ἡλίου*
- E *Περὶ τῶν ἀποστημάτων αὐτῆς*
- Q *‘Über die Entfernungen des Mondes’*
- G *Περὶ τῶν ἀποστημάτων τῆς σελήνης*

Here we have yet another example of variation between an expanded title and differing versions of a shorter title.<sup>529</sup> The shortest is in S, where the particle is obviously an editorial insert in order to connect it with the previous sub-sections. Given the evidence of the other titles, it is likely that S left out the reference to the moon because this was self-evident in the context of his chapter. Something similar will have happened in the case of the pronoun in E. On the other hand, the long title in P does not cover the contents of the chapter precisely enough, since it speaks about the distances of the moon from the sun *and* the earth. It is apparent that we should opt for the title preserved by G and Q.<sup>530</sup> For the individual doxai we determine the following:

- (1) The first doxa makes good sense in P, supported by EQG: the moon is twice as far from the sun as it is from the earth. These are the kind of rough estimates that the doxographer usually prefers; cf. the sizes in ¶21 and ¶26. The text in S differs in two respects. The genitive *τῆς σελήνης* is obviously mistaken and can easily be explained.<sup>531</sup> It is also likely that he made a mistake in swapping around *γῆς* and *ἡλίου*. The text of the scholion in Ptolemy, *Ἐμπεδοκλῆς διπλάσιον ἀπέχειν τὴν σελήνην ἀπὸ τῆς γῆς ἐδόξαζεν*, might seem to support S, but the explanation of a case of *parablepsis* is more plausible.<sup>532</sup>

<sup>529</sup> See above n. 506.

<sup>530</sup> This the conclusion reached by Mansfeld at the end of his discussion, (2000b) 184.

<sup>531</sup> Cf. Mansfeld (2000b) 185: ‘Stobaeus decided to delete *τῆς σελήνης* in his sub-heading, and this decision was still on his mind when he copied out the first lemma so he wrote a genitive instead of the required accusative’.

<sup>532</sup> Cf. Mansfeld (2000b) *ibid.*, who also notes that the verb is an addition by the scholiast.



- (2) The next doxa (S<sub>2</sub>) is unproblematic, with almost no variation between the witnesses (the adversative δέ in S and the scholion may well be original, heightening the opposition to the first view).
- (3) The third lemma (S<sub>3</sub>) gives the view of Eratosthenes, the only time he is mentioned in Book II (the only other reference is in 1.21 on time). The lemma is textually complex because it contains exact figures which can easily be corrupted in transmission. In P another case of *parablepsis* occurred, but the mistake in the mss. can easily be rectified because it occurred after the separation of the other five witnesses (including Lydus).<sup>533</sup> There are two figures, the first for the distance between the sun and the earth, the second for the distance from the moon to the earth. The variants are as follows:

	<b>first figure</b>	<b>second figure</b>
E (mss.)	400 myriads + 8 myriads	78 myriads
S	400 <sup>534</sup> myriads + 8 myriads	78 myriads
G	3 myriads + 8 myriads	78 myriads
Lydus	400 + 8 myriads	78 myriads
Q	408,000	78 thousands <sup>535</sup>
Scholion	300 myriads + 8 myriads	78 myriads
T	more than 400 myriads	

It would seem that 4,080,000 and 780,000 are the most likely figures. As Mansfeld points out,<sup>536</sup> the discrepancies in G and the Scholion can be explained through incorrect abbreviation of τετραχούσιος (= υ') to τ'. The surprising element of these figures is that they provide a ratio between the distances of less than 5:1, i.e. much less than the 18:1 of the astronomers in the second lemma. One would have expected an ascending sequence.<sup>537</sup> It is to be agreed with Mansfeld that certainty cannot be obtained on the basis of our evidence.

- (4) Next A's text (now found in S only, = S<sub>4</sub>) returns to Empedocles with the doxa that the distance from the earth to the heaven is less than the horizontal breadth of the cosmos, like an egg lying on its side.<sup>538</sup> The doxa clearly introduces a new theme. Although the theme of distance

<sup>533</sup> There is a difference of opinion on what the exact lacuna is. Diels, followed by Mansfeld, sees the word ἀπέχειν as the trigger, Mau and Lachenaud μυριάδας. It makes little difference, but we follow Mau.

<sup>534</sup> The mss. text in fact reads μυριάδας μυριάδων. Diels, followed by Wachsmuth, bracketed the second word. If this emendation is not accepted, the number becomes 400 myriad myriads plus 8 myriads.

<sup>535</sup> Both figures based on Daiber's translation. The Arabic definitely reads thousands, not myriads.

<sup>536</sup> Mansfeld (2000b) 187–188.

<sup>537</sup> This is surmised by Heath (1913) 340, but his reading of the figures is questionable. The ratio posited by Posidonius at Pliny *NH* 2.85 is 250:1.

<sup>538</sup> We differ here from the earlier view of Mansfeld (2000b) 192, who postulated that the egg was upright.

is still involved, there is no direct link with the moon. The repetition of the name-label of Empedocles also suggests the introduction of a new subject. There is consistency with the earlier lemma because the view that the moon is rather close to the earth suggests that the height of the heaven above the earth is not so great. The comparison with an egg recalls A 2.4\* on the shape of the cosmos (attributed anonymously).

- (5) The final doxa, attributed to Boethus (presumably the Stoic<sup>539</sup>), argues against Empedocles (note the *δέ* and the repeated *τὸ ἀναπεπταμένον*) that the great breadth of the sky is merely a matter of appearance (cf. a similar doxa attributed to Boethus on comets at P 3.2.7, also containing the word *φαντασία*). The *διαφωνία* is immediately apparent. By arguing that the sky is not so broad and flat as it appears, Boethus is implicitly defending the standard view that the cosmos is a sphere. As so often an ‘epistemological’ view is left to the end.

The question remains how the chapter as a whole is to be read. A valuable clue is provided by the Aratean scholion cited above in sect. 4. The title of §19 *Περὶ ἀποστάσεως τοῦ οὐρανοῦ ἀπὸ τῆς γῆς* covers the subject of the last two doxai rather nicely, even if the contents of the chapter cannot help us. It is very likely, therefore, that A derived his two doxai from an anterior doxographical source which devoted a separate chapter to the subject. Since S records his text so faithfully here, it is more likely that the coalescence was due to A than to his witness, so we do not postulate a separate chapter at this point (or earlier in the book).

The chapter thus consists of a list in the form of a type C diaeresis (apparently not sequentially ordered), followed by a type A diaeresis. The connection between the two parts is rather loose, linked only by the notion of distance. We note yet again how A only gives a very scanty selection of views.

6. The subject of this chapter is mentioned twice by Aristotle (texts below). In both cases he refers to astronomical research and does not discuss the subject in detail himself. In an important text Simplicius informs us that Eudemus had discussed the subject in his account of

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<sup>539</sup> Von Arnim at *RE* 3.692 plausibly suggests these views may have come from Boethus’ *Commentary on Aratus*. Boethus (of Sidon) is dated to the 2nd cent. BCE. Almost contemporary must have been Boethus of Marathon, an Academic and younger colleague of Carneades, while Boethus the Peripatetic is dated to the end of the 1st cent. BCE. The last-named would seem too late for A (though there is mention of his colleague Xenarchus at S 1.49.1b). Sceptical academics only occur in A in some chapters in Book IV (P 4.8–13) and are not given individual name-labels.

astronomical researches and made reference to the views of Anaximander and the Pythagoreans. This suggests that the doxai in A may well go back to Eudemos as ultimate source (rather than Theophrastus as in the Dielsian hypothesis).<sup>540</sup>

For Galen the subject is an example of how far the human mind can go in its researches. Pliny is critical of human attempts (anticipating T), but gives a valuable doxography, in which views similar to the first two doxai in A can be recognized (the view of Empedocles is attributed to the Pythagoreans and a precise figure added, the ‘scientific’ view is anonymous as in A). Most intriguingly all three of A’s doxai can be recognized *in the same order* in a passage in Plutarch’s treatise on the face on the moon (text below): (1) Empedocles’ view that the moon almost grazes the earth; (2) the view of Aristarchus in his treatise that distance of the sun is more than 18 and less than 20 times the distance of the moon from the earth; (3) the highest estimate of 4030 myriads of stades, i.e. the view of Eratosthenes (who is not named). We note that Plutarch names Aristarchus as the scientist responsible for the ‘scientific’ view. It is likely that he consulted the *Placita* and used its information as a framework for his own more elaborate discussion.<sup>541</sup> The question of cosmic distances is also touched upon in various texts relating the interpretation of Plato’s astronomy in the *Timaeus* (cf. Plutarch *De anim. procr.*, Hippolytus, Macrobius), but the links to the *Placita* are less direct.<sup>542</sup>

STRUCTURE (see above sect. 5)

- |   |   |
|---|---|
| <p>A distances from moon to earth and sun</p> <p>1 ratio 1:2 (= §1)</p> <p>2 ratio 1:18 (= §2)</p> <p>3 absolute figures (ratio 1:5?) (= §3)</p> <p>B relation breadth and height of sky</p> <p>1 sky broader than high (= §4)</p> <p>2 breadth of sky mere appearance (= §5)</p> | <div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;">A</div> <div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;">1</div> <div style="display: inline-block; vertical-align: middle;">2</div> <div style="display: inline-block; vertical-align: middle;">3</div> </div> </div> <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <div style="display: inline-block; vertical-align: middle;">B</div> <div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;">1 (cf. A1)</div> <div style="display: inline-block; vertical-align: middle;">2</div> </div> </div> </div> |
|---|---|

<sup>540</sup> See further Mansfeld (2000b) 200.

<sup>541</sup> Cf. Mansfeld (2000b) 192: ‘We may therefore hypothesize that he preferred to substitute more detailed and more accurate data concerning Empedocles and Aristarchus, and replaced Eratosthenes’ tenet by an equally spectacular though quite similar view.’ On Plutarch’s use of the *Placita* on the moon’s composition see ch. 30 sect. 6.

<sup>542</sup> On this tradition see Mansfeld (2000b) 194–198.

## RECONSTRUCTED TEXT

λα'. Περί ἀποστημάτων τῆς σελήνης<sup>1</sup>

- 1 Ἐμπεδοκλῆς διπλάσιον ἀπέχειν τὴν σελήνην ἀπὸ τοῦ ἡλίου ἥπερ ἀπὸ τῆς γῆς<sup>2</sup>.
- 2 οἱ δὲ<sup>3</sup> ἀπὸ τῶν μαθηματικῶν ὀκτωκαιδεκαπλάσιον.
- 3 Ἐρατοσθένης τὸν ἥλιον ἀπέχειν τῆς γῆς σταδίων μυριάδας τετρακοσίας καὶ ὀκτακισμυρίας<sup>4</sup>, τὴν δὲ σελήνην ἀπέχειν τῆς γῆς μυριάδας ἑβδομήκοντα ὀκτώ.
- 4 Ἐμπεδοκλῆς τοῦ ὕψους τοῦ ἀπὸ τῆς γῆς εἰς τὸν<sup>5</sup> οὐρανόν, ἥτις ἐστὶν ἀφ' ἡμῶν ἀνάτασις, πλείονα εἶναι τὴν κατὰ τὸ πλάτος διάστασιν, κατὰ τοῦτο τοῦ οὐρανοῦ μᾶλλον ἀναπεπταμένου διὰ τὸ ὥψ παραπλησίως τὸν κόσμον κείσθαι.
- 5 Βόηθος δὲ πρὸς τὴν φαντασίαν δέχεται τὸ ἀναπεπταμένον, οὐ κατὰ τὴν ὑπόστασιν.

- 
- 1 GQ, Περί τῶν ἀποστημάτων τῆς σελήνης, πόσον ἀφέστηκε τοῦ ἡλίου P, Περί τῶν ἀποστημάτων αὐτῆς E, Περί δὲ τῶν ἀποστημάτων S
  - 2 Φ, τῆς σελήνης ἀπὸ γῆς ἥπερ ἀπὸ τοῦ ἡλίου S, τὴν σελήνην ἀπὸ τῆς γῆς Sch ad Ptol.
  - 3 SSch, omit. PEG
  - 4 σταδίων μυριάδας μυριάδων τετρασχοσίας καὶ στάδια ὀκτάκις μύρια S, σταδίων μυριάδας τρεῖς καὶ στάδια ὀκτάκις μυριάδας G, et vide supra
  - 5 S mss. οἶον, corr. Diels

§1 31A61 DK; §2–; §3–; §4 31A50 DK; §5 *SVF* fr.9

### 31. On the distances of the moon

- 1 Empedocles (declares that) the moon is double the distance from the sun that it is from the earth.
- 2 But some astronomers (declare that it is) eighteen times.
- 3 Eratosthenes (declares that) the sun is distant four hundred and eight myriads of stades from the earth, and that the moon is distant seventy-eight myriads (of stades) from the earth.
- 4 Empedocles (declares that) the distension (of the heaven) in its breadth is greater than the height from the earth to heaven, which is its extension from us, the increased spreading out of the heaven having occurred for the reason that the cosmos is lying (on its side) in a manner similar to an egg.
- 5 But Boethus understands the spreading out as a matter of appearance, not of reality.

## DIALECTICAL-DOXOGRAPHIC PARALLELS

**Aristotle** *Cael.* 2.10 291a29–31, see above ch. 15; cf. 291b9–11; *Met.* 1.8 345b1–6, see above ch. 21. **Eudemus** *ap.* Simp. *in Cael.* 471.2–5, cf. above ch. 15. **Posidonius** fr. F18 E.-K. (= Simp. *in Ph.* 291.26), cf. ch. 11. **Pliny** *NH* 2.83, intervalla quoque siderum a terra multi indagare temptarunt, et solem abesse a luna undeviginti partes quantam lunam ipsam a terra prodiderunt. Pythagoras vero, vir sagacis animi, a terra ad lunam CXXVI milia stadiorum esse collegit, ad solem ab ea duplum, inde ad duodecim signa triplicatum, in qua sententia et Gallus Sulpicius fuit noster ... 85 Posidonius ... a turbido ad lunam viciens centum milia stadiorum, inde ad solem quinquies miliens ... inconperta haec et inextricabilia, sed prodenda quia sunt prodita ... 87 mirum quo precedat improbitas cordis humani parvulo aliquo invitata successu, sicut in supra dictis occasionem inpudentiae ratio largitur. ausique divinare solis ad terram spatia eadem ad caelum agunt ... **Plutarch** *De facie* 925A–D, ἀλλ' ἥλιον μὲν ἀπλῆτους μυριάδας ἀπέχειν τῆς ἄνω περιφορᾶς φατε ... καὶ φωσφόρον ἐπ' αὐτῷ καὶ στίλβοντα καὶ τοὺς ἄλλους πλάνητας ὑφιεμένους τε τῶν ἀπλανῶν καὶ πρὸς ἀλλήλους ἐν διαστάσει μεγάλαις φέρεσθαι, τοῖς δὲ βαρέσι καὶ γεώδεσιν οὐδεμίαν οἶσθε τὸν κόσμον εὐρυχωρίαν παρέχειν ἐν ἐαυτῷ καὶ διάστασιν; ὁρᾷτε ὅτι γελοῖόν ἐστιν, εἰ γῆν οὐ φήσομεν εἶναι τὴν σελήνην, ὅτι τῆς κάτω χώρας ἀφέστηκεν, ἄστρον δὲ φήσομεν, ὁρῶντες ἀπωσμένην τῆς ἄνω περιφορᾶς μυριάσι σταδίων τοσαύταις ὥσπερ (εἰς) βυθόν τινα καταδεδυκυῖαν. τῶν μὲν γ' ἄστρον κατωτέρω τοσοῦτόν ἐστιν, ὅσον οὐκ ἂν τις εἴποι μέτρον, ἀλλ' ἐπιλείπουσιν ὑμᾶς τοὺς μαθηματικούς ἐκλογιζομένους οἱ ἀριθμοί, τῆς δὲ γῆς τρόπον τινὰ ψαύει καὶ περιφερομένη πλησίον, “ἄρματος ὡς περὶ χνοίη ἐλίσσεται” φησὶν Ἐμπεδοκλῆς ... σκόπει δὲ τοὺς ἄλλους ἀφείς ἀπλανεῖς καὶ πλανήτας ἃ δείκνυσιν Ἀρίσταρχος ἐν τῷ Περὶ μεγεθῶν καὶ ἀποστημάτων ὅτι “τὸ τοῦ ἡλίου ἀπόστημα τοῦ ἀποστήματος τῆς σελήνης ὁ ἀφέστηκεν ἡμῶν πλέον μὲν ἢ ὀκτωκαίδεκαπλάσιον ἔλαττον δ' ἢ εἰκοσαπλάσιόν ἐστι”. καίτοι ὁ τὴν σελήνην ἐπὶ μήκιστον αἰῶνα ἀπέχειν φησὶν ἡμῶν ἕξ καὶ πεντηκονταπλάσιον τῆς ἐκ τοῦ κέντρου τῆς γῆς. αὕτη δ' ἐστὶ τεσσάρων μυριάδων καὶ κατὰ τοὺς μέσους ἀναμετροῦντας· καὶ ἀπὸ ταύτης συλλογιζομένοις ἀπέχει ὁ ἥλιος τῆς σελήνης πλέον ἢ τετρακισχιλίας τριάκοντα μυριάδας· οὕτως ἀπώκισται τοῦ ἡλίου διὰ βάρος καὶ τοσοῦτο τῇ γῇ προσκεχώρηκεν ...; cf. *De animae procr.* 1028A, 1030B–C. **Lucian** *Par.* 11, see ch. 1. **Galen** see above ch. 26. **Theon Smyrnaeus** *Expos.* 197.8–12 (Hipparchus). **Hippolytus** *Ref.* 4.8–12. **Basil** see above ch. 26. **Calcidius** *Comm. in Ti.* 96. **Macrobius** *Comm. in Somn. Scip.* 2.3.13–14. **Augustine** *Conf.* 10.16.25, neque enim nunc scrutamur plagas caeli aut siderum intervalla dimetimus vel terrae libramenta quaerimus.

Aëtius *Placita* 2.32

Περὶ ἐνιαυτοῦ, πόσος ἑκάστου τῶν πλανητῶν χρόνος,  
καὶ τίς ὁ μέγας ἐνιαυτός

WITNESSES

Ps.Plutarch 2.32, Eusebius 15.54, ps.Galen 73, Qusṭā Ibn Lūqā 2.32  
Stobaeus 1.8.42  
Cf. Achilles 18, 19

ANALYSIS

1. In the final chapter of Book II our doxographer leaves the subject of the moon and returns to that of the other heavenly bodies, recording the length of the planetary revolutions and also adding some doxai on the length of the so-called Great year. As was the case in the previous chapter, it poses a question in the category of quantity (again indicated by the word πόσος, see our remarks in ch. 31 sect. 1). The chapter is well preserved in both P and S, but there is no trace of it in T. However, now that the unusual circumstances of the S's excerpting of the chapters on the moon no longer obtain (see ch. 28 sect. 1), we return to our practice of starting with P and his tradition.

2. P preserves seven doxai, if we adhere to our practice of regarding every οἱ μὲν and οἱ δέ as a separate doxa.

λβ'. Περὶ ἐνιαυτοῦ, πόσος ἑκάστου τῶν πλανητῶν χρόνος, καὶ τίς ὁ μέγας ἐνιαυτός

- P2.32.1 ἐνιαυτός ἐστι Κρόνου μὲν ἐνιαυτῶν περίοδος λ', Διὸς δὲ ιβ',  
Ἄρεος δυεῖν, Ἡλίου ιβ' μῆνες· οἱ δ' αὐτοὶ Ἑρμοῦ καὶ Ἀφροδίτης,  
ἰσόδρομοι γάρ· σελήνης ἡμέραι λ'· οὗτος γάρ ὁ τέλειος μὴν ἀπὸ  
φάσεως εἰς σύνοδον.
- P2.32.2 τὸν δὲ μέγαν ἐνιαυτὸν οἱ μὲν ἐν τῇ ὀκταετηρίδι τίθενται,
- P2.32.3 οἱ δ' ἐν τῇ ἐννεακαιδεκαετηρίδι,
- P2.32.4 οἱ δ' ἐν τοῖς ἐξήκοντα ἐνὸς δέουσιν.
- P2.32.5 Ἡράκλειτος ἐκ μυρίων ὀκτακισχιλίων ἡλιακῶν.
- P2.32.6 Διογένης ἐκ πέντε καὶ ἐξήκοντα καὶ τριακοσίων ἐνιαυτῶν  
τοσοῦτων ὅσων ὁ κατὰ Ἡράκλειτον ἐνιαυτός.
- P2.32.7 ἄλλοι δὲ δι' ἑπτακισχιλίων ψοζ'.

Taking the other witnesses into account, we note first that there is once again considerable variation in the chapter's title. As so often P preserves a long title, also found in Q (there is little to choose between ἐνιαυτοῦ in P and ἐνιαυτῶν in Q). The title in E and G is short, but with the same variation between singular (G) and plural (E). Since S does not help us, we have four variations to choose from, and to some degree the choice has to be arbitrary. Both E and G leave out the last doxa, but it is preserved in Q<sup>543</sup>

3. S includes the chapter in an early chapter of his anthology devoted to the nature and cause of time. In it he also includes the two chapters on time and the οὐσία of time from Book I (21–22) and a brief chapter consisting of the only lemma (as far as we can tell) from Book III on winter and summer (8). After this he appears to write the chapter out in full, just like he did with the later chapters on the moon:

- 1.8 title    Περὶ χρόνου οὐσίας καὶ μερῶν καὶ πόσων εἴη αἴτιος  
 1.8.42c  
 S1    ἐνιαυτός ἐστι Κρόνου μὲν ἐνιαυτῶν περίοδος τριάκοντα, Διὸς δώδεκα, Ἄρεος δυοῖν, Ἡλίου δώδεκα μήνες· οἱ δ' αὐτοὶ Ἑρμοῦ καὶ Ἀφροδίτης, ἰσοδρομοὶ γάρ· Σελήνης ἡμέραι τριάκοντα. οὗτος γὰρ ὁ τέλειος μὴν ἀπὸ φάσεως εἰς σύνοδον.  
 S2    γίγνεσθαι δὲ τὸν λεγόμενον μέγαν ἐνιαυτὸν, ὅταν ἐπὶ τοὺς ἀφ' ὧν ἤρξαντο τῆς κινήσεως ἀφίκωνται τόπους.  
 S3    τὸν δέ γε μέγαν ἐνιαυτὸν οἱ μὲν ἐν τῇ ὀκταετηρίδι τίθενται,  
 S4    οἱ δὲ ἐν τῇ ἐννεακαιδεκαετηρίδι,  
 S5    οἱ δ' ἐν τοῖς τετραπλασίοις ἔτεσιν,  
 S6    οἱ δ' ἐν τοῖς ἐξήκοντα (ἐνὸς δέουσιν), ἐν οἷς Οἰνοπίδης καὶ Πυθαγόρας·  
 S7    οἱ δ' ἐν τῇ λεγομένῃ κεφαλῇ τοῦ Κρόνου, αὕτη δ' ἐστὶ τῶν ἑπτὰ πλανητῶν ἐπὶ ταύτῃ ἡμέρᾳ τῆς ἐξ ἄρκτου φορᾶς ἐπάνοδος.  
 S8    Ἡράκλειτος ἐκ μυρίων ὀκτακισχιλίων ἐνιαυτῶν ἡλιακῶν.  
 S9    Διογένης ὁ Στωϊκὸς ἐκ πέντε καὶ ἐξήκοντα καὶ τριακοσίων ἐνιαυτῶν τοσοῦτων, ὅσος ἦν ὁ καθ' Ἡράκλειτον ἐνιαυτός.

The final lemma found in P is missing (as in EG). This may be deliberate; cf. 2.14.4\*, 2.24.6\*, where he also discards or overlooks anonymous doxai; see our remarks in Vol. I:235. The material not shared with P is S2, the name-labels added in S6, and S7. The two conjectures ἐπὶ

<sup>543</sup> G's period of 15 months for the yearly revolution of Mars is puzzling and is most likely another case of *Verschlimmbesserung*. Other sources give just under two years (Cic. *N.D.* 2.53, Theon *Expos.* 136.8) or about 2.5 years (Cleomedes *Cael.* 1.2.27, Geminus 1.26).

τοὺς <αὐτοὺς> in S2 by Canter and ἐν τοῖς ἐξήκοντα <ένος δέουσιν> in S6 by Heeren (from P) cannot be considered certain. The latter could have been an omission by S. It is important to observe that the order of the material in both witnesses is exactly the same, encouraging the conclusion that S has simply copied the chapter out as he found it in A, with the exception of the final deleted lemma.

4. In Ach two passages discuss the subject-matter of A's chapter. Ch. 18 is entitled Τίς ὁ καλούμενος μέγας ἐνιαυτός, καὶ ἐν πόσοις χρόνοις ἔκαστος τῶν πλανήτων ἀποκαθίσταται, which is not dissimilar to the title in P with the two parts reversed. Ach gives a longer account of the planetary revolutions:

*Isagoge* 18, 44.14–28 Maass ~ 25.8–10 Di Maria

πάλιν ὁ πρῶτος, ὁ τοῦ Κρόνου, ἀστήρ παραγίνεται ἀπὸ ζωδίου ἐπὶ ζώδιον παχυμερῶς μὲν καὶ πλατυκῶς ἔτεσι τριάκοντα, ἀπὸ δὲ σημείου ἐπὶ σημείον ἀποκαθίσταται ἐν ἐτῶν μυριάσι τριακονταπέντε καὶ ἔτεσιν ἑξακοσίαις τριακονταπέντε. οὗτος δὲ ἐστὶν ὁ καλούμενος μέγας ἐνιαυτός. ὁ δὲ τοῦ Διὸς ἀστήρ, ὁ δεῦτερος, παραγίνεται ἀπὸ ζωδίου ἐπὶ ζώδιον πλατυκῶς καὶ παχυμερῶς ἔτεσιν δυοκαίδεκα, ἀπὸ δὲ σημείου ἐπὶ σημείον ἀποκαθίσταται ἐν μυριάσιν ἐτῶν δεκαεπτὰ καὶ ἔτεσι χ'. ὁ δὲ τοῦ Ἄρεος περιέρχεται ἀπὸ ζωδίου ἐπὶ ζώδιον δι' ἐτῶν δύο καὶ ἀπὸ σημείου ἐπὶ σημείον ἐν μυριάσιν ἐτῶν δυοκαίδεκα. ὁ δὲ τῆς σελήνης περιέρχεται ἀπὸ ζωδίου ἐπὶ ζώδιον κατὰ μῆνα ἕκαστον, ὁ δὲ ἥλιος ἐν τεῖς ἡμέραις καὶ λεπτοῖς, ὅς δὴ χρόνος καλεῖται ἐνιαυτός ἡλιακός. ὁμοίως δὲ καὶ ὁ τῆς Ἀφροδίτης καὶ (ὁ) τοῦ Ἑρμοῦ τῷ ἡλίῳ δι' ἐνιαυτοῦ ἀπὸ ζωδίου ἐπὶ ζώδιον παραγίνονται· σχεδὸν γὰρ ἰσοταχεῖς εἰσιν.

We note that, in contrast to A, he gives both the solar length and the period of the ἀποκατάστασις to the same point in the Zodiac (which for Saturn amounts to the Great year). The figures for the solar revolutions are the same as in A (except that the sun's is expressed as 365 days and not 12 months), but the figure for Saturn's Great year differs markedly.

At the end of the next ch. 19 on the sun there is also a relevant passage on its revolutions:<sup>544</sup>

*Isagoge* 19, 47.20–27 Maass ~ 28.18–29.2 Di Maria

λέγεται δὲ ἐνιαυτός ἢ ἀπὸ ζωδίου ἐπὶ ζώδιον ἀποκατάστασις αὐτοῦ ἐν ἡμέραις τεῖς καὶ ἐλαχίστοις μορίῳι. ἀπὸ δὲ σημείου ἐπὶ σημείον ἀποκαθίσταται ἐν ὀκταετηρίδι (ὥς μὲν λέγει Εὐδόξος ἐν τῇ Ὀκταετηρίδι), εἶγε γνήσιόν ἐστι τὸ σύγγραμμα (Ἐρατοσθένης γὰρ ἀντέγραψεν δεικνύς, ὥς οὐκ εἴη Εὐδόξου),

<sup>544</sup> We print the text of Di Maria, who has taken over the conjecture of Lasserre indicating that the first doxa is that of Eudoxus. The words in the first set of angle brackets are not present in Maass' text.



κατὰ δὲ τινος ἐν <ἕξ καὶ> ἑβδομήκοντα ἔτεσιν (ἥς δόξης ἐστὶ καὶ Κάλλιππος),  
κατὰ δὲ Μέτωνα δι' ἑννεακαιδεκαετηρίδος. ταύτη κατηγολούθησεν Ἄρατος·  
φησὶ γάρ ... (cites vv. 752–755).

Here Ach gives three views on the luni-solar year, of which two are identical with those found in A. The difference is that Ach supplies the name-labels (Eudoxus for the eight-year period, Callippus for 76 years, Meton for 19 years, followed by Aratus). Of these only Eudoxus and Aratus appear in the *Placita* (together at 2.19.3\* where three verses of Aratus are quoted, the former only at P 4.1.7). The convergences of these texts are such that they may derive from a distantly shared tradition.

5. As we concluded above, A's chapter is well-preserved by S and can be reconstructed with confidence.

(1) He opens with a straightforward listing of the planetary 'years'. We note that it is presented in the indicative and no name-label is attached, since on this subject there is little or no room for dispute. He gives round figures, eschewing any effort at accuracy, as is his wont. At the same time he gives a fine example of his love of symmetry and reduction: by describing the solar year as 12 months and the lunar 'year' as 30 days, only three numbers are used in a ring composition, i.e.:

30 years	_____	Saturn
12 years	_____	Jupiter
	2 years ———	Mars
12 months	_____	Sun (& Mercury-Venus)
30 days	_____	Moon

The final sentence of the doxa refers only to the moon. A complete μὴν for the moon is equivalent to an ἐνιαυτός for the sun.

(2) In contrast to the planetary year is the so-called 'Great year', which is first introduced merely as (the length of time) when the planets return to the places from which they started their motion. Here A moves from the indicative to *oratio obliqua* (with φασὶ implicit), perhaps an indication that he is moving into more controversial astronomical territory.<sup>545</sup> This description is too brief, however, for it does not distinguish between

<sup>545</sup> The γέ in S is probably resumptive and an indication that the section on the 'Great year' in S but missing in P was most likely present in A.

the shorter luni-solar year, which aims to calculate the period of perfect conjunction between the lunar and solar cycles, and the much longer ‘Great year’, which represents the conjunction between the revolutions of all the seven planets. Censorinus, as we shall see, distinguishes between a *magnus annus* and a *maximus annus*, but such terminology is uncommon, and many sources simply use the term *magnus annus* for either or both as A does.<sup>546</sup>

(3) The next four doxai, giving 8, 19, 76 and 59 years respectively (S4–7), all clearly relate to the luni-solar year. Only for the last-named are labels given, i.e. Oenipides and Pythagoras; cf. 2.12.2\*, where the former is stated as having plagiarized the latter. Here too the non-chronological order of the names suggests a short-hand way of saying ‘this Great year is known as that of Oenipides, but he took the idea from Pythagoras’.<sup>547</sup> It is hard to say why A deviates from an ascending order of magnitude. Perhaps he leaves the 59-year doxa until last because it includes names. But, as we can see from Aratus, it would not have been difficult to add names for the other doxai.

(4) The next doxa, also found only in S (S7), is quite puzzling. Connected by another δέ, it appears to continue the list of anonymous doxai, but in actual fact it marks the transition to the much longer ‘Great year proper’. The purpose of the sentence is to introduce this, i.e. parallel to the function of S2 (both are left out by P). The expression ‘but others (place the Great year) in what is called the ‘Head of Kronos’’ is difficult. The closest parallel is in fact found in the very first reference to the Great year in extant literature, at Plato *Ti.* 39c (the τέλος ἐνιαυτός is when ἀπασῶν τῶν ὀκτὼ περιόδων τὰ πρὸς ἄλληλα συμπερανθέντα τάχῃ σχῆι κεφαλὴν τῷ τοῦ ταῦτοῦ καὶ ὁμοίως ἰόντος ἀναμετρηθέντα κύκλῳ). Taylor suggests that the Aëtian passage simply alludes to this text.<sup>548</sup> He also proposes two changes to the text: (a) ἐξ ἀρχῆς instead of the scarcely intelligible ἐξ ἄρκτου; (b) τοῦ χρόνου instead of τοῦ Κρόνου. The first, though not paleographically very obvious, is tempting, since directions such as north and south are hardly relevant to the passage of planets through the Zodiacal circle.<sup>549</sup> The second is more dubious.<sup>550</sup>

<sup>546</sup> Cf. Pease’s note on Cicero *N.D.* 2.51.

<sup>547</sup> Cf. Burkert (1972) 306 n. 38.

<sup>548</sup> In his commentary on Plato’s *Timaeus*, (1928) 219.

<sup>549</sup> Unless somehow the Great year was taken to commence when all the planets were aligned in the northern part of the sky. We follow Diels and Wachsmuth in not athetizing the text.

<sup>550</sup> The expression κεφαλὴ τοῦ χρόνου in Lydus and Basil given by Taylor in a

What may be meant is the ἀποκατάστασις of the planet Saturn to the same position as given in Ach (see below). Since this figure is the largest, it will represent the largest year of all (350,635 years in Ach). It is clear, at any rate, that A means the return of all the seven planets on the same day to their original position.

(5) The remaining three doxai (S8–9, P7) give figures for the ‘Great year’ as now introduced. Each involves very large numbers (of which the second is a multiplication of the first), the first two with explicit name-labels, the final doxa presented anonymously.

6. Before we draw conclusions on the structure of the chapter, it will be worthwhile to examine the doxographical parallels. Various sources give accounts of the length of the planetary revolutions. Just as is the case in A, it is not regarded as a matter of scientific controversy.<sup>551</sup> Quite different is the treatment of the subject of the Great year, which is discussed as a controversial subject in numerous ancient works.<sup>552</sup> Cicero introduces the subject of its length as a *magna quaestio*, but assures his reader that it must have a definite answer (text below).<sup>553</sup> There is, however, another much more copious source that sheds a flood of light on our text. As part of his congratulations to Caerilius on his 49th birthday in the year 238 CE, Censorinus devotes an entire chapter (18) to the subject of the Great year. The Roman rhetor too begins by emphasizing that both nations and authors have given differing figures (18.1), indicating the extremes of the diacresis of views in the anonymous form that has become familiar to us in our study of A’s method. Thereafter a very full and copious doxography follows, which can be presented as follows (the asterisks indicate parallel doxai in Aëtius, the Greek terms cited are found in the Latin text):

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learned note is not relevant, but the texts from Lydus and Philo in which κεφαλὴ means ‘starting-point’ are helpful.

<sup>551</sup> See Cicero *N.D.* 2.52–53; Geminus 1.24–30; Cleomedes *Cael.* 1.2.20–42; Theon *Expos.* 136.1–9.

<sup>552</sup> A list that must be virtually complete can be gained from Pease’s note to Cicero *N.D.* 2.51, Rocca-Serra (1980) 61–64, Sallmann (1983) 39–44. We have not attempted to cite all these texts (many of which are quite restricted) in our list of dialectical-doxographical parallels.

<sup>553</sup> Mansfeld (1971) 142 n. 28 notes that Cicero at *N.D.* 2.49–56 in emphasizing the influence of the planets on the seasons combines what in A has been separated over two chapters, i.e. ¶19 and ¶32.

	doxa	name-label
	( <b>annus magnus</b> , cf. 18.11)	
18.2	διετηρίς/τριετηρίς (2)	ancient Greeks
18.3	τετραετηρίς/πενταετηρίς (4)	ancient Greeks
18.5	ὀκταετηρίς/ἐννεαετηρίς (8)*	some say Eudoxus of Cnidus others Cleostratus of Tenedos then Harpalus, Nauteles, Menestratus others Dositheus
18.7	δωδεκαετηρίς (12)	Chaldeans
18.8	ἐννεαδεκαετηρίς (19)*	Meton
	59 years*	Philolaus the Pythagorean
	76 years*	Calippus of Cyzicus
	82 years	Democritus
18.9	204 years	Hipparchus
18.10	1461 years	Egyptian calendar
18.11	<b>annus maximus</b>	(Aristotle)
	2484 years	Aristarchus
	5552 years	Aretes of Dyrrachium
	10,800	Heraclitus and Linus
	10,884	Dion
	120,000	Orpheus
	3,600,000	Cassander
	infinite	others

The doxography is much fuller than that of A, but the method is very similar, confirming our structural analysis above. There is a long type C diaeresis, starting with the smallest numbers and advancing to the maximum, which includes a major division between the *anni magni* and the *annus maximus*, as is made clear at 18.11. We note further that all of A's numbers for the luni-solar year (i.e. the *annus magnus*) can be found in Censorinus, and that there are various resemblances for the remaining three numbers for the Great year proper.<sup>554</sup> However, only one actual name-label is held in common, that of Heraclitus. The divergence of the name-label for the doxa of 59 years should also be noted, Censorinus recording Philolaus rather than Oenipides and Pythagoras.

<sup>554</sup> For Heraclitus the confusion between 10800 (Censorinus) and 18000 (Aëtius) could easily be made. Diels and Kranz (*ad* 22A13 and in the *Nachtrag*) assume that Censorinus is right because 10,800 is 360 × 30, i.e. 360 generations. But Van der Waerden (1952) 142 points out that both figures are divisible by 3600, and amount to 3 and 5 Babylonian sars respectively (a sar being 3600 years). The figure for Diogenes (365 times Heraclitus' year) is not so far from that of Cassander (the largest finite figure recorded by Censorinus), if Heraclitus' number was taken as originally 10,800. Nothing in Censorinus recalls A's final number (7777), unless it were Aretes' 5552. Closer is the number 9977 given by Sextus Empiricus, *Adv. Math.* 5.105.

Diels devoted more than a dozen pages of his ‘Prolegomena’ to the treatise of Censorinus (*DG* 186–199). The parallels that he observed between Aëtius Books IV and V and the *De die natali* play a vital part in his reconstruction of the doxographical tradition, and especially in establishing the existence of the *Vetusta Placita*. But remarkably he makes no reference to the similarities between the two chapters which we have just outlined. As Rocca Serra judiciously notes,<sup>555</sup> it is probable that at least the sections at 18.8 and 18.11 derive from the *Placita*. The intermediary, as Diels already observed for the material from Books IV–V, was most likely Varro. Censorinus’ chapter in fact gives a further very strong indication in this direction, for the astronomer Dio (of Naples) is mentioned elsewhere only once, in Augustine *C.D.* 21.8 in a *verbatim* quote from Varro’s *De gente populi Romani*.<sup>556</sup> We will not, however, enter here into the question of whether the collection of *Placita* used by Varro should be identified with Diels’ *Vetusta Placita*, a conclusion that has recently come under attack.<sup>557</sup> It must be emphasized once again that the *Placita* tradition grew by gradual accretion, modification and adaptation. There is thus not much to be gained by the attempt to pin down the precise common source involved. What is important is that both A and Varro–Censorinus are drawing on a common tradition, and, more importantly perhaps, that in both cases a similar method is involved.

7. Against this background we can now see that A’s chapter combines discussion of at least three kinds of ‘years’, with first a division being made between the revolutions of single planets and the ‘Great year’ obtained when these revolutions are made collectively, and secondly—but less clearly—a distinction between the relatively short (i.e. luni-solar) Great year and the Great year involving the conjunction of all the planets and entailing ‘astronomically’ long periods of time. For the second division there is a parallelism between the two parts, in each case the kind of year is first explained, followed by a number of doxai.<sup>558</sup>

<sup>555</sup> Rocca-Serra (1980) ix.

<sup>556</sup> Sallmann (1988) 129.

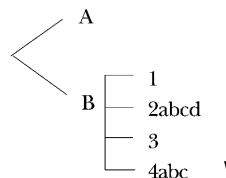
<sup>557</sup> Cf. Mansfeld (1989b) 334–338, (1990a) 3179–3183, who argues that they are more likely to be identified with a *Vetustissima Placita*, of which traces have been found in Chrysippus.

<sup>558</sup> It is marred by the different ways in which this is done, firstly (in S2) without attribution, secondly (in S7) anonymously.

Taking the second part of the main division as a whole, we can see that A uses a long diaeresis involving an ascending sequence of numbers. Basically this amounts to a type C diaeresis, even if it can be subdivided into 2 groups. One is reminded of two other doxographies in which a presentation in terms of ascending numbers is used: the number of ἀρχαί and the number of parts of the soul. These are not used by A, but there are significant traces of the procedure elsewhere.<sup>559</sup> The doxographer starts with the number one and moves gradually through the numbers, ending at infinity in the case of the ἀρχαί, and seventeen for the soul's parts. The parallel with the Great year figures is not exact. It cannot start at one (though this does occur in the planetary years in the first division), but both A and on a greater scale Censorinus start as low down as possible and move on through the numbers until they reach the huge figures at the end. Twice A interrupts the ascending sequence. Both times this is primarily, we would argue, for stylistic reasons. 76 is placed before 59 because it happens to be 4 times 19 (and so allows the doxographer to refer to the number more elegantly). The number 7777 is perhaps left to the end because it is an anonymous view. The general principle of the ascending diaeresis remains basically intact.

STRUCTURE (see above sect. 7)

- A the planetary years
  - 1 length of revolutions of planets (= § 1)
- B the 'Great year'
  - 1 explanation of what 'Great year' is (= § 2)
  - 2abcd various views (small figures) (= §§ 3–6)
  - 3 transition to larger 'Great year' (= § 7)
  - 4abc various views (larger figures) (= §§ 8–10)



<sup>559</sup> For the former cf. Mansfeld (1990a) 3157–3161, for the latter Tert. *De anima* 14.1 (cf. Diels *DG* 205–206, but Philippon's conjecture is better, see Rist (1969) 180).

## RECONSTRUCTED TEXT

λβ'. Περὶ ἐνιαυτοῦ, πόσος ἑκάστου τῶν πλανητῶν χρόνος, καὶ τίς ὁ μέγας ἐνιαυτός<sup>1</sup>

- 1 ἐνιαυτός ἐστι Κρόνου μὲν ἐνιαυτῶν περίοδος τριάκοντα, Διὸς δὲ  
 δώδεκα, Ἄρεος δυεῖν, Ἡλίου δώδεκα μῆνες· οἱ δ' αὐτοὶ Ἑρμοῦ καὶ  
 Ἀφροδίτης, ἰσόδρομοι γάρ· σελήνης ἡμέραι τριάκοντα· οὗτος γὰρ ὁ  
 τέλειος μὴν ἀπὸ φάσεως<sup>2</sup> εἰς σύνοδον.  
 2 γίγνεσθαι δὲ τὸν λεγόμενον μέγαν ἐνιαυτὸν, ὅταν ἐπὶ τοὺς ἀφ' ὧν  
 ἤρξαντο τῆς κινήσεως ἀφίκωνται τόπους.  
 3 τὸν δὲ γε<sup>3</sup> μέγαν ἐνιαυτὸν οἱ μὲν ἐν τῇ ὀκταετηρίδι τίθενται,  
 4 οἱ δ' ἐν τῇ ἐννεακαιδεκαετηρίδι,  
 5 οἱ δ' ἐν τοῖς τετραπλασίοις ἔτεσιν,  
 6 οἱ δ' ἐν τοῖς ἐξήκοντα ἑνὸς δέουσιν<sup>4</sup>, ἐν οἷς Οἰνοπίδης καὶ  
 Πυθαγόρας·  
 7 οἱ δ' ἐν τῇ λεγομένῃ κεφαλῇ τοῦ Κρόνου<sup>5</sup>, αὕτη δ' ἐστὶ τῶν ἑπτὰ  
 πλανητῶν ἐπὶ ταύτῃ ἡμέρᾳ τῆς ἐξ ἄρκτου<sup>6</sup> φορὰς ἐπάνοδος.  
 8 Ἡράκλειτος ἐκ μυθίων ὀκτακισχιλίων ἡλιακῶν.  
 9 Διογένης ὁ Στωικὸς ἐκ πέντε καὶ ἐξήκοντα καὶ τριακοσίων  
 ἐνιαυτῶν τοσοῦτων ὅσων<sup>7</sup> ὁ κατὰ Ἡράκλειτον ἐνιαυτός.  
 10 ἄλλοι δὲ δι' ἑπτακισχιλίων ἑπτακοσίων ἑβδομήκοντα ἑπτὰ<sup>8</sup>.

- 1 P, 'Über die Jahre, wie lange die Zeit jedes einzelnen von den Planeten währt  
 und was das ganz große Jahr ist' Q, Περὶ ἐνιαυτῶν E, Περὶ ἐνιαυτοῦ G  
 2 ἀπὸ φάσεως E  
 3 γε S, om. P  
 4 ἑνὸς δέουσιν om. S  
 5 χρόνου conj. Taylor  
 6 ἐξ ἀρκῆς conj. Taylor  
 7 ὅσος ἦν S  
 8 lemma deest in SEG

§ 6a 41.9 DK, § 6b–; § 8 22A13 DK; § 9 *SIF* fr. 28

32. On the year, how great the time of (the revolution of) each of the planets is, and what the Great year is

- 1 A year for Saturn is a period of thirty years, but for Jupiter it is twelve (years), for Mars two (years), for the Sun twelve months; and the same (months are the period) for Mercury and Venus, for they move at the same speed. (The time period) of the moon is thirty days, for this is the complete month from its appearance to the conjunction (with the sun).  
 2 But (they declare that) the so-called Great year occurs whenever (the planets) reach the locations from which they commenced their motion.

- 3 And as far as the Great year is concerned, some (thinkers) place it in the eighth year,
- 4 others in the nineteenth year,
- 5 others in the years that are a fourfold (i.e. in the 76th year),
- 6 yet others in the 59th year, among whom are Oenopides and Pythagoras.
- 7 But there are others (who place it) in the so-called Head of Saturn, and this is the return of the seven planets on the same day of their movement from the North.
- 8 Heraclitus (declares that the Great year consists) of eighteen thousand solar years.
- 9 Diogenes the Stoic (declares that the Great year consists) of 365 years times what the (Great) year is according to Heraclitus.
- 10 But others (declare that the Great year occurs) every 7777 (years).

#### DIALECTICAL-DOXOGRAPHIC PARALLELS

**Cicero** *N.D.* 2.51, quarum (sc. stellarum) ex disparibus motionibus magnum annum mathematici nominaverunt, qui tum efficitur cum solis et lunae et quinque errantium ad eandem inter se comparisonem confectis omnium spatiis est facta conversio; quae quam longa sit magna quaestio est, esse vero certam et definitam necesse est. **Theon Smyrnaeus** *Expos.* 198.14–16 Hiller, cited above on ch. 12. **Censorinus** *De die natali* 18.1–11, nunc de annis maioribus dicam, quorum magnitudo adeo diverse tam gentibus observata quam auctoribus tradita est, ut alii annum magnum esse in annis vertentibus duobus, alii in multis milibus annorum arbitrati sint ... (see further above sect. 6). **Macrobius** *Comm. in somn. Scip.* 2.11.8–11. **Augustine** *De Gen. ad Litt. imperf. liber* 38, cum omnia sidera ad idem redierint annus magnus peragitur, de quo multi multa dixerunt. **Proclus** *in Ti.* 3.92.1–10. **Isidore of Seville** *De rer. nat.* 23.



## EPILOGUE

### 1. *A reconstruction completed*

We have come to the end of the long process of preparing a *specimen reconstructionis* of Book II of Aëtius' compendium. For the first time in the history of scholarship there is a single unified text that contains the collection of the *placita* on the cosmos in a form that approximates its author's intentions. Since there is very little chance that a complete copy of the original will become available to us through a papyrus find or a hitherto undiscovered manuscript, the text which will be printed immediately following this epilogue is about as close to the lost original as it will ever be possible to come, or at least so we believe.

### 2. *Characteristic features of the doxography*

The completed reconstruction gives a splendid overview of the main characteristics of doxography as practised by our mysterious doxographer. A brief summary of these can be outlined as follows:

(1) The book consists of a table of contents (*pinax*), a brief preface and 35 chapters which contain doxai varying from two to fifteen in number. Unlike other books, it has no monolemmatic chapters (but this is perhaps an indication that it is better preserved than the others). The book contains 219 doxai in total.

(2) The book as a whole is remarkably compact in its presentation. The amount of doctrinal information that it manages to cram into its pages is quite amazing. The techniques of linguistic compression used to achieve this presentation, which stand in a tradition going back to Aristotle and earlier, deserve further study. Individual doxai are also for the most part very brief. The very shortest consist of no more than two words, the name-label of the philosopher concerned and the adjective describing the subject of the chapter (e.g. Thales on the earthy nature of the sun and the moon in 2.20.9\* and 2.25.9\*). But the book also contains a number of quite long lemmata (e.g. 2.7.1\*, 2.7.6\*, 2.20.12–

13\*, 2.24.8\* etc.). These passages are in fact the ones for which it is most difficult to establish the precise text.

(3) The book demonstrates in a more uniform fashion than the other four the basic doxographical formula of the name-label plus a view on a particular subject, usually as defined by the heading of the chapter. There are no doxai in the book which do not have a name-label of some kind (but eighteen are anonymous). Nearly all the name-labels refer to philosophers. Exceptions are scientists such as Eudoxus (2.19.3\*) and Eratosthenes (2.31.3\*), the group of ‘astronomers’ (μαθηματικοί) referred to on six occasions, and—not to forget—the poet Aratus (also in 2.19.3\*).

(4) The topics that the book covers are as a whole neatly organized, starting with the cosmos (or *kosmos*) as a whole (ch. 1–10), then moving on to the heavenly bodies (ch. 11–19), the sun (ch. 20–24), the moon (ch. 25–31), and finishing with a final chapter on the measurement of cosmic time (ch. 32). Virtually all the chapters in the book can be fitted into the scheme of the Aristotelian categories (essence, quantity, quality, relation, disposition etc.). It is by no means fanciful to see this scheme as essential to the way the doxographical method developed.<sup>560</sup>

(5) The entire book demonstrates the fundamentally *thetic* mode of doxography. Views are posited, not argued for. There is not a single true argument in the whole book. One might take as an exception a proof attributed to Aristotle which uses modal logic when discussing the question whether the cosmos receives nourishment (2.5.1\*). But even in this example the doxa stating that the cosmos does not need nourishment is a premiss and not the conclusion.<sup>561</sup> Unlike in other books of the compendium, at no stage does the doxographer criticize an opinion that he records. We just get the one opinion after the other, attributed to thinkers and affirmed as doctrine. The basic verb that is understood in most doxai is ἀποφαίνειν, ‘to declare’ or ‘to reveal’ as one’s view. There is hardly any room for doubt or dispute, at most for the admission of multiple views (usually attributed to Epicurus, e.g. in 2.2.5\*, 2.13.15\* etc.).

(6) Yet it would be wrong to conclude that Aëtius’ book is no more than a plain and artless compilation of views. Even though there is no argument, there is a good deal of—at times—quite artful organization. Each chapter represents an opportunity to organize the opinions that

<sup>560</sup> On the role of the categories see further Part I, sect. 1.

<sup>561</sup> And the argument is fallacious; see our comments in Part II, ch. 5 sect. 5.

have been collected in meaningful arrangements, so that their diversity can be surveyed, understood and utilized. The main instrument used for this purpose, as we have repeatedly seen, is the diaeresis. Every chapter almost without exception is marked by the juxtaposition of one or more sets of contrasting views, whether set in direct opposition in the form of a diaphonia or sorted in the form of a series of views.<sup>562</sup> An important result of our research is the demonstration that the diaereses used in our author's doxographies are extensively paralleled in both the philosophical and the rhetorical tradition, and in numerous cases can be traced to scholastic traditions going back to Aristotle and beyond. The use of the diaeresis as a principle of arrangement is thus by no means just a personal idiosyncrasy of this particular work, even if it appears to have been carried to greater lengths than elsewhere.<sup>563</sup>

(7) But it would also be quite wrong to conclude that the diaeresis is our author's only means of arrangement. As we have seen in our analysis, other techniques are used as well. The most important of these is the emphasis on the successions of philosophers, particularly in relation to the earliest philosophers, and on the schools (αἱρέσεις) that arose from the time of Plato onwards.<sup>564</sup> It is no coincidence that many of the chapters start with doxai of venerable figures such as Thales (e.g. 2.13.1\*), Anaximander (2.20.1\*), Pythagoras (2.1.1\*), and so on. The early historiography of philosophy makes its presence felt here, if only to a limited degree. Another organizational technique that is often used is to leave exceptional or idiosyncratic views, or loose comments, to the end of the chapter where they interfere least with the main arrangement.

Let this summary suffice for the chief characteristics of the book as we have been able to reconstruct it. We wish to emphasize that Book II is only one of five books, each of which has its own special features which set it apart from the others. Book II happens to be that part of the work which is best preserved by our witnesses and for this reason served us well as the example for a first reconstruction of the original work. For a more detailed analysis of the features of the entire compendium, the reader is asked to consult Part I of this study,

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<sup>562</sup> On the role of the diaeresis in Aëtius' work see further Part I, sect. 1.

<sup>563</sup> For example in the use of symmetrical arrangements; see our analyses of 2.4\*, 2.11\*, 2.21\*.

<sup>564</sup> On the role of the successions and the sects see further Part I, sect. 7.

where these features and their historical background are presented and analysed in much greater detail.

A final point concerns the relation between author and work. As we have repeatedly emphasized, our author is a shadowy figure. In spite of a few scattered first person singulars and plurals,<sup>565</sup> he recedes almost entirely behind the text. In a sense this is very fitting. The doxographical method was developed over a number of centuries and used to compile manuals with little individuality. There is scant room for any kind of originality. In our analysis of Book II we have seen how various authors associated with the *Placita* have used the method: Aëtius in the fullest version, ps.Plutarch in an epitome, ps.Galen in a further reduction, Philo, Achilles and Theodoret in their adaptations. One might indeed almost speak of a *Doxographien-Kollektiv*. Nevertheless there still should be some room for an appreciation of what the compilation we have reconstructed represents. It is certainly no masterpiece. It is, however, the best example we have of a most unusual genre, quite different from anything that a modern scholar would ever put together. To the extent that we understand its aim, we believe it should be regarded as interesting in its own right. It certainly deserves to be taken more seriously than as just a *Fundgrube* for material on ancient philosophers' views, which has hitherto been the general scholarly practice. Once again we should emphasize how much our attitude differs from that of our great predecessor Hermann Diels, whose value-judgment on Aëtius was that he was at best an indispensable but poor guide to earlier traditions and at worst an incompetent fraud.

### 3. *How accurate is the text?*

Turning now to the text that we will present in the following pages, we should start by saying that at first sight it looks very much like a critical text of the usual kind familiar to classical scholars. It has a unified body of text, an *apparatus criticus* with textual variants and an *apparatus testimoniorum*. But looks can deceive. It is in fact not a critical text but a *Lesetext*, based not on manuscripts of Aëtius' work but on independent witnesses who can offer only an imperfect guide to the original text. To what extent can we have confidence in the

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<sup>565</sup> Analysed in Part I, sect. 4.

result of our reconstructive labours? A first limitation is imposed by the quality of the editions available to us. In the case of some authors (ps.Galen, Stobaeus, Theodoret) these were published more than a century ago. They were produced by excellent scholars but are not perfect. A second limitation is caused by the fact that at many places the witnesses offer irreducible variants. The most obvious example is the great variation in chapter headings that the various witnesses give.<sup>566</sup> But there are many more cases, particularly in the longer lemmata, in which the main sources P and S give readings that cannot be reduced to each other and between which we have to choose. A third limitation is that the methods used by the witnesses in adapting the original text are not always predictable, no matter how hard we try to determine their usual *modus operandi*. A good example is found at the beginning of 2.20\*, where it is likely that S placed the views of Xenophanes first in his chapter on the sun, even though the doxa of Anaximander stood first in the text he was excerpting. An important consequence of this uncertainty is that we can never be sure that we have the text in its entirety. Here we have to rely on Stobaeus, but he is never wholly predictable in what he may include, or replace with another text, such as from Arius Didymus or a direct quote from Plato.<sup>567</sup>

On the other hand, the difference between a genuine critical text and our *specimen reconstructionis* must not be exaggerated. In both cases textual choices have to be made, based on an understanding of the style and method of the author that can only come from long and detailed acquaintance with the textual evidence. Necessarily, because of the nature of the witnesses to Aëtius and their methods, the resultant text must be somewhat more speculative than a normal critical text. This is particularly evident in the three cases where we felt it necessary to postulate additional chapters not found in P's epitome (2.2a\*, 2.5a\*, 2.17a\*). We have tried to stick as close as possible to the evidence, particularly in trying to determine what doxai should be included and in what order. The analyses of the structure of individual chapters, as summarized in the diagrams we have included, are not meant to be

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<sup>566</sup> On the subject of the chapter headings in Aëtius and the considerable variation that they reveal, see further Part I, sect. 17.

<sup>567</sup> But, most importantly, the chapters on which the text of Book II is based have not been touched by the Byzantine epitomators. This is what makes the record for Book II so much better than for the other books. See further Vol. I:202–203.

definitive but rather are meant as aids to understanding how these chapters work. They make a contribution, but are not the last word. This must be given by the text itself.

#### 4. *The need for an 'édition raisonnée'*

There is, however, another vital difference between a critical text and our reconstruction. It is not generally required of textual critics, in establishing the original text of their author, to explain in detail the critical choices which they make. These are regarded as being self-evident from the text itself, perhaps aided by the translation into a modern language that in recent years has tended to accompany the critical text. Only in very rare cases does the *apparatus criticus* contain a brief note explaining how the critic understands a particular problem raised by the language of the text. For the editor who wishes to reconstruct Aëtius' text, however, this method will not do. We see this very clearly in the edition of Diels, where in many cases we can only guess why he made the decisions that he did. Because of the nature of the process of reconstruction involved, every step that the editor takes needs to be clarified, whether in dealing with the witnesses, or in establishing the order of the doxai, or in determining the choice of text. This is the reason why the reconstruction of little more than twenty pages of text has required the long and detailed analysis which we have presented in the current volume. The way that Aëtius' work has been transmitted to us allows no other alternative. Any future edition of his work will need to take this requirement into account. It will need to be accompanied by an explanatory section to make clear to the user every step that the editor has taken. This can perhaps be presented in a compact form, but the mechanism of the apparatus will not suffice. The task will require at the very least a brief set of annotations on every chapter.

#### 5. *The need for further textual archaeology*

Now that the text of Book II has been reconstructed, we can look further at its contents. Many intriguing questions come to the fore. Where did the doxographer obtain his material from in the earlier traditions of Greek philosophy? How did he adapt it, and why did he put it together in this particular form? First answers to many of these

questions as they relate to Book II have been given in Part I of the present study. But much remains to be done. Take, for example, the chapters on the moon's illuminations, eclipse and appearance (2.27–29\*). The doxographer finds it difficult to disentangle these questions, which suggests that he or an intermediate source may have divided into short doxai accounts of individual philosophers' views that originally treated these subjects together (as also occurs in AD). More research needs to be done on Epicurean doxai that Aëtius records and how they relate to the remains of Epicurus' works; on the evidence provided by Cicero in the 1st cent. BCE; on the important process of Platonization and (Neo-)Pythagorization that the *Placita* have undergone; and so on.<sup>568</sup>

### 6. *Towards a complete edition of Aëtius*

But there is a task of greater urgency. We are persuaded that our next step must be to embark on a complete edition of the remains of Aëtius' work. For this task our *specimen reconstructionis* of Book II can be used as a sound methodological guide. It will once again have to be a *Lesetext*, but we aim to overcome the problems of outdated editions of the primary witnesses. As argued above, text and translation will need to be supplemented by a compact set of annotations explaining all the moves made in presenting and determining the text. We recognize that the result, for the remaining four books, will not be as complete as for the privileged Book II. Nevertheless it is a task that needs to be done, and it now can be done. The aim will be to give scholars a text of Aëtius' compendium that they can work with, for the betterment of our understanding of Greek philosophy in both its earlier and its later development.<sup>569</sup>

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<sup>568</sup> This research was the aim of the third volume of the *Aëtiana* project as originally planned; see Vol.I:xix.

<sup>569</sup> As noted in the Introduction, we are delighted to announce that Prof. Oliver Primavesi (Munich) has agreed to join us in preparing this new edition.





TEXT AND TRANSLATION AËTIUS BOOK II

ΠΕΡΙ ΤΩΝ ΑΡΕΣΚΟΝΤΩΝ  
ΤΟΙΣ ΦΙΛΟΣΟΦΟΙΣ ΦΥΣΙΚΩΝ ΔΟΓΜΑΤΩΝ

ΤΟ Β<sup>1</sup>

ἐν ᾧ κεφάλαια τάδε·

- α'. Περὶ κόσμου
- β'. Περὶ σχήματος κόσμου
- ⟨β<sup>+</sup>'. Περὶ κινήσεως κόσμου<sup>2</sup>⟩
- γ'. Εἰ ἔμψυχος ὁ κόσμος καὶ προνοία διοικούμενος
- δ'. Εἰ ἀφθαρτος ὁ κόσμος
- ε'. Πόθεν τρέφεται ὁ κόσμος
- ⟨ε<sup>+</sup>'. Ποῦ ἔχει τὸ ἡγεμονικὸν ὁ κόσμος<sup>3</sup>⟩
- ς'. Ἀπὸ ποίου πρώτου στοιχείου ἤρξατο κοσμοποιεῖν ὁ θεός
- ζ'. Περὶ τάξεως τοῦ κόσμου
- η'. Τίς ἡ αἰτία τοῦ τὸν κόσμον ἐγκλιθῆναι
- θ'. Περὶ τοῦ ἐκτὸς τοῦ κόσμου, εἰ ἔστι κενόν
- ί'. Τίνα δεξιὰ τοῦ κόσμου καὶ τίνα ἀριστερά
- ια'. Περὶ οὐρανοῦ, τίς ἡ τούτου οὐσία
- ιβ'. Περὶ διαιρέσεως οὐρανοῦ, εἰς πόσους κύκλους διαιρεῖται
- ιγ'. Τίς ἡ οὐσία τῶν ἀστρῶν, πλανητῶν καὶ ἀπλανῶν
- ιδ'. Περὶ σχημάτων ἀστέρων
- ιε'. Περὶ τάξεως ἀστέρων
- ις'. Περὶ τῆς τῶν ἀστέρων φορᾶς καὶ κινήσεως
- ιζ'. Πόθεν φωτίζονται οἱ ἀστέρες
- ⟨ιζ<sup>+</sup>'. Πόθεν τρέφονται οἱ ἀστέρες<sup>4</sup>⟩
- ιη'. Περὶ τῶν ἀστρῶν τῶν καλουμένων Διοσκοούρων
- ιθ'. Περὶ ἐπισημασίας ἀστέρων<sup>5</sup>
- κ'. Περὶ οὐσίας ἡλίου<sup>6</sup>
- κα'. Περὶ μεγέθους ἡλίου
- κβ'. Περὶ σχήματος ἡλίου
- κγ'. Περὶ τροπῶν ἡλίου
- κδ'. Περὶ ἐκλείψεως ἡλίου
- κε'. Περὶ οὐσίας σελήνης
- κς'. Περὶ μεγέθους σελήνης
- κζ'. Περὶ σχήματος σελήνης
- κη'. Περὶ φωτισμῶν σελήνης
- κθ'. Περὶ ἐκλείψεως σελήνης

ON THE PHYSICAL DOCTRINES  
HELD BY THE PHILOSOPHERS  
BOOK II

in which the following headings (are found):

- 1 On the cosmos
- 2 On the shape of the cosmos
- 2a On the movement of the cosmos
- 3 Whether the cosmos is ensouled and administered by providence
- 4 Whether the cosmos is indestructible
- 5 Where does the cosmos obtain its nourishment from
- 5a Where does the cosmos have its regent part
- 6 From what kind of first element did the god begin to make the cosmos
- 7 On the order of the cosmos
- 8 What is the cause of the cosmos having been tilted
- 9 On what is outside the cosmos, whether a void exists
- 10 What are the right (parts) of the cosmos and what are the left
- 11 On the heaven, what is its substance
- 12 On the division of heaven, into how many circles is it divided
- 13 What is the substance of the heavenly bodies, both planets and fixed stars
- 14 On the shapes of the stars
- 15 On the ordering of the heavenly bodies
- 16 On the displacement and movement of the heavenly bodies
- 17 From where do the stars obtain their illumination
- 17a From where do the stars obtain their nourishment
- 18 On the stars that are called the Dioscuri
- 19 On signs of the seasons produced by the heavenly bodies
- 20 On the substance of the sun
- 21 On the size of the sun
- 22 On the shape of the sun
- 23 On the turnings of the sun
- 24 On the eclipse of the sun
- 25 On the substance of the moon
- 26 On the size of the moon
- 27 On the shape of the moon
- 28 On the illuminations of the moon
- 29 On the eclipse of the moon

λ'. Περι ἐμφάσεως αὐτῆς καὶ διὰ τί γεώδης φαίνεται

λα'. Περι τῶν ἀποστημάτων τῆς σελήνης<sup>7</sup>

λβ'. Περι ἐνιαυτοῦ, πόσος ἐκάστου τῶν πλανητῶν χρόνος, καὶ τίς ὁ μέγας ἐνιαυτός

- 
- 1 P<sub>1</sub>, P<sub>2</sub> τὸ βιβλίον β', βιβλίον δεύτερον  
 2 non exstat in P, addidimus  
 3 non exstat in P, addidimus  
 4 non exstat in P, addidimus  
 5 add. P καὶ πῶς γίνεται χειμῶν καὶ θέρος  
 6 add. P καὶ ὅτι δύο καὶ τρεῖς εἰσιν  
 7 add. P πόσον ἀφέστηκε τοῦ ἡλίου

τετελεκώς τοίνυν τὸν περὶ ἀρχῶν καὶ στοιχείων καὶ τῶν συνεδρευόντων αὐτοῖς λόγον τρέψομαι πρὸς τὸν ἐπὶ<sup>1</sup> τῶν ἀποτελεσμάτων, ἀπὸ τοῦ περιε-  
 κτικωτάτου πάντων ἐνοστησάμενος.

- 
- 1 P, περί conj. corrector ms. Vossiani, prob. Diels non recte

α'. Περι κόσμου

- 1 Πυθαγόρας πρῶτος ὠνόμασε τὴν τῶν ὅλων περιοχὴν κόσμον ἐκ τῆς ἐν αὐτῷ τάξεως.  
 2 Θαλῆς Πυθαγόρας Ἐμπεδοκλῆς Ἐκφαντος Παρμενίδης Μέλισσος Ἡράκλειτος Ἀναξαγόρας Πλάτων Ἀριστοτέλης Ζήνων ἓνα τὸν κόσμον  
 3 Ἀναξίμανδρος Ἀναξιμένης Ἀρχέλαος Ξενοφάνης Διογένης Λεύκιππος Δημόκριτος Ἐπίκουρος καὶ ὁ τοῦτου καθηγητὴς Μητροδόωρος<sup>1</sup> ἀπείρους κόσμους ἐν τῷ ἀπείρῳ κατὰ πᾶσαν περίστασιν<sup>2</sup>.  
 4 τῶν ἀπείρους ἀποφνηαμένων τοὺς κόσμους Ἀναξίμανδρος τὸ ἴσον αὐτοὺς ἀπέχειν ἀλλήλων,  
 5 Ἐπίκουρος ἄνισον εἶναι τὸ μεταξὺ τῶν κόσμων διάστημα.  
 6 Ἐμπεδοκλῆς τὸν τοῦ ἡλίου περιδρομον εἶναι περιγραφὴν τοῦ πέρατος τοῦ κόσμου<sup>3</sup>.  
 7 Σέλευκος ὁ Ἐρυθραῖος καὶ Ἡρακλείδης ὁ Ποντικὸς ἄπειρον τὸν κόσμον.  
 8 Διογένης καὶ Μέλισσος τὸ μὲν πᾶν ἄπειρον, τὸν δὲ κόσμον πεπεράν-  
 θαι.  
 9 οἱ Στωικοὶ διαφέρειν τὸ πᾶν καὶ τὸ ὅλον· πᾶν<sup>4</sup> μὲν γὰρ εἶναι σὺν τῷ κενῷ τῷ ἀπείρῳ<sup>5</sup>, ὅλον δὲ χωρὶς τοῦ κενοῦ τὸν κόσμον· ὥστε [οὐ] τὸ αὐτὸ εἶναι τὸ ὅλον καὶ τὸν κόσμον<sup>6</sup>.

- 30 On its appearance and why it appears to be earthy
- 31 On the distances of the moon
- 32 On the year, how great the time of (the revolution of) each of the planets is, and what the Great year is.

[Preface]

Having thus completed my account of the principles and elements and what is closely associated with them, I shall turn to the account concerned with the products, starting with the most comprehensive of all things.

1. On the cosmos

- 1 Pythagoras was the first to call the container of all things 'cosmos' on the basis of the order present in it.
- 2 Thales, Pythagoras, Empedocles, Ecphantus, Parmenides, Melissus, Heraclitus, Anaxagoras, Plato, Aristotle and Zeno (declare that) the cosmos is unique.
- 3 Anaximander, Anaximenes, Archelaus, Xenophanes, Diogenes, Leucippus, Democritus, Epicurus and his teacher Metrodorus (declare that there are) infinite *kosmoi* in the infinite space throughout the entire surrounding area.
- 4 Of those that declare there to be infinite *kosmoi* Anaximander (declares that) they are at an equal distance from each other,
- 5 whereas Epicurus (declares that) the distance between the *kosmoi* is unequal.
- 6 Empedocles (declares that) the revolution of the sun is the perimeter of the cosmos' limit.
- 7 Seleucus of the Red Sea and Heraclides from Pontus (declare that) the cosmos is infinite.
- 8 Diogenes and Melissus (declare that) the universe is infinite, but the cosmos is limited.
- 9 The Stoics (declare that) the universe and the whole differ, for the universe is the cosmos together with the infinite void, whereas the whole is the cosmos apart from the void; as a result the whole and the cosmos amount to the same.

- 
- 1 ὁ τούτου καθηγητῆς Μητροδωρος Cyril, τούτων Q, ὁ τούτων μαθητῆς P, ὁ τούτου καθηγητῆς Λεύκιππος G, verba omisit S  
 2 περιαγωγὴν S  
 3 τοῦ πέρατος τοῦ κόσμου SGCyrilQ Diels, τοῦ κόσμου καὶ τοῦ πέρατος αὐτοῦ P<sup>1</sup>, τοῦ κόσμου καὶ τοῦτο πέρας αὐτοῦ P<sup>2</sup>  
 4 ἅπαν Cyril, cf. G  
 5 σὺν τῷ κενῷ τῷ ἀπειρῷ SCyril Diels, τὸ σὺν κενῷ ἄπειρον PQ, σὺν τῷ κενῷ ἀπειρῷ G  
 6 ὥστε ... κόσμον om. P<sup>1</sup>S, secl. Diels; οὐ om. CyrilQ, conj. Vossius Reiske prob. Diels, ὥστε οὐ τὸ αὐτὸ εἶναι τὸ πᾶν conj. nonnulli (cf. Ach)
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§1 14.21 DK; §2a 11A13b DK; §2b-; §2c-; §2d 51.3 DK; §2e 28A36 DK; §2f 30A9 DK; §2g 22A10 DK; §2h 59A63 DK; §2i-; §2j T19 Gigon; §2k *SIF* 1.97; §3a 12A17 DK; §3b 13A10 DK; §3c 60A13 DK; §3d 21A37 DK; §3e 64A10 DK; §3f-; §3g fr. 352 Luria; §3h fr. 301 Usener; §3i 70A7 DK; §4 12A17 DK; §5 fr. 301 Usener; §6 31A50 DK; §7a-; §7b fr. 112 Wehrli, 74 Schütrumpf; §8a 64A10 DK; §8b-; §9 *SIF* 2.522

### β'. Περί σχήματος κόσμου<sup>1</sup>

- 1 οἱ μὲν Στωικοὶ σφαιροειδῆ τὸν κόσμον,  
 2 ἄλλοι δὲ κωνοειδῆ,  
 3 οἱ δ' ὦοειδῆ<sup>2</sup>.  
 4 Λεύκιππος καὶ Δημόκριτος σφαιροειδῆ τὸν κόσμον,  
 5 Ἐπίκουρος δ' ἐνδέχεσθαι μὲν εἶναι σφαιροειδεῖς τοὺς κόσμους, ἐνδέχεσθαι δὲ καὶ ἐτέροις σχήμασι κεχρῆσθαι.

- 
- 1 Περί σχήματος G, εἰ σφαιροειδεῖς ὁ κόσμος ἢ κυμβοειδεῖς P<sup>marg</sup>  
 2 ὦοειδῆ PQCyrilAch, κυκλοειδῆ G
- 

§1 *SIF* 2.547; §2-; §3-; §4 67a22 DK; §5 fr. 302 Usener

### 〈β<sup>+</sup>. Περί κινήσεως κόσμου〉<sup>1</sup>

- 1 οἱ μὲν μυλοειδῶς,  
 2 οἱ δὲ τρόχου δίκην περιδινεῖσθαι 〈τὸν κόσμον〉<sup>2</sup>.  
 3 〈οἱ Στωικοὶ〉<sup>3</sup> μήτε αὔξεσθαι δὲ μήτε μειοῦσθαι τὸν κόσμον, τοῖς δὲ μέρεσιν ὅτε μὲν παρεκτείνεσθαι πρὸς πλείονα τόπον, ὅτε δὲ συστέλλεσθαι.

- 
- 1 coniecimus  
 2 addidimus  
 3 addidimus
- 

§1-; §2 13A12 DK; §3 *SIF* 2.597

## 2. On the shape of the cosmos

- 1 The Stoics (declare that) the cosmos is ball-like (i.e. spherical),
- 2 but others (declare that it is) cone-like,
- 3 while yet others (declare that it is) egg-like.
- 4 Leucippus and Democritus (declare that) the cosmos is ball-like.
- 5 Epicurus, however, (declares that) it is possible that the *kosmoi* are ball-like, but that is possible that they make use of other shapes as well.

## 2a. On the motion of the cosmos

- 1 Some (declare that) the cosmos moves like a millstone,
- 2 while others (declare that) it whirls in the manner of a wheel.
- 3 The Stoics (declare that) the cosmos neither increases nor diminishes, but with its parts it sometimes extends to a more ample location, while on other occasions it contracts.

γ'. Εἰ ἔμψυχος ὁ κόσμος καὶ προνοία διοικούμενος<sup>1</sup>

- 1 οἱ μὲν ἄλλοι πάντες ἔμψυχον τὸν κόσμον καὶ προνοία διοικούμενον.
- 2 Λεύκιππος<sup>2</sup> δὲ καὶ Δημόκριτος καὶ Ἐπίκουρος καὶ ὅσοι τὰ ἄτομα εἰσηγοῦνται καὶ τὸ κενὸν οὐτ' ἔμψυχον οὔτε προνοία διοικεῖσθαι, φύσει δέ τι ἀλόγῳ<sup>3</sup>.
- 3 Ἐκφαντος ἐκ μὲν τῶν ἀτόμων συνεστάναι τὸν κόσμον, διοικεῖσθαι δὲ ὑπὸ προνοίας.
- 4 Ἀριστοτέλης οὐτ' ἔμψυχον ὅλον δι' ὅλων<sup>4</sup>, οὔτε μὴν αἰσθητικὸν<sup>5</sup> οὔτε λογικόν<sup>6</sup> οὔτε νοερὸν οὔτε προνοία διοικούμενον· τὰ μὲν γὰρ οὐράνια τούτων πάντων<sup>7</sup> κοινωνεῖν, σφαίρας γὰρ περιέχειν ἔμψυχους καὶ ζωτικάς, τὰ δὲ περιγεία μηδενὸς αὐτῶν, τῆς δ' εὐταξίας κατὰ συμβεβηκὸς οὐ προηγουμένως μετέχειν.

1 καὶ ... διοικούμενος om. P<sup>2</sup>G

2 Λεύκιππος δὲ καὶ Δημόκριτος καὶ Ἐπίκουρος S, Δημόκριτος δὲ καὶ Ἐπίκουρος P

3 καὶ ὅσοι ... ἀλόγῳ PQ, S οὐδέτερα τούτων, φύσει δὲ ἀλόγῳ ἐκ τῶν ἀτόμων συνε-  
στάτα (cf G)

4 ὅλου SG Diels

5 μὴν αἰσθητικὸν PQ, αἰσθητόν G, om. ESCyril

6 οὔτε λογικόν om. Q

7 πάντων ESGCyril Diels, ἀπάντων P

§1–; §2a 67A22 DK; §2b fr. 23, 589 Luria; §2c fr. 382 Usener; §3 51.4 DK; §4 T19 Gígon

δ'. Εἰ ἄφθαρτος ὁ κόσμος

- 1 Πυθαγόρας Ἡράκλειτος γενητὸν κατ' ἐπίνοιαν τὸν κόσμον, οὐ κατὰ χρόνον<sup>1</sup>.
- 2 οἱ Στωικοὶ (ὑπὸ θεοῦ γεγενῆσθαι τὸν κόσμον)<sup>2</sup>.
- 3 Ἐπίδικος ὑπὸ φύσεως γεγενῆσθαι τὸν κόσμον.
- 4 Ἀρχέλαος ὑπὸ θερμοῦ καὶ ἔμψυχίας<sup>3</sup> συστήναι τὸν κόσμον.
- 5 Ξενοφάνης Παρμενίδης Μέλισσος ἀγένητον καὶ αἰδίων καὶ ἄφθαρτον τὸν κόσμον.
- 6 [καί]<sup>4</sup> οἱ φάμενοι δὲ τὴν διακόσμησιν αἰώνιον ὑπάρχειν περιοδευτικούς εἶναι φασὶ χρόνους, καθ' οὓς κατὰ ταῦτα καὶ ὡσαύτως γίνεσθαι πάντα καὶ τὴν αὐτὴν διασφύζεσθαι τοῦ κόσμου διάταξιν τε καὶ διακόσμησιν.
- 7 Ἀναξίμανδρος Ἀναξίμενης Ἀναξαγόρας Ἀρχέλαος Διογένης Λεύκιππος φθαρτὸν τὸν κόσμον.
- 8 καὶ<sup>5</sup> οἱ Στωικοὶ φθαρτὸν τὸν κόσμον, κατ' ἐκπύρωσιν δέ.



### 3. Whether the cosmos is ensouled and administered by providence

- 1 All other (philosophers declare that) the cosmos is ensouled and administered by providence.
- 2 But Leucippus and Democritus and Epicurus and those who introduce atoms and the void (declare that) it is neither ensouled nor administered by providence, but rather by an unreasoning natural force.
- 3 Ecphantus (declares that) the cosmos is composed of atoms, but is (nevertheless) administered by providence.
- 4 Aristotle (declares that the cosmos is) neither ensouled through and through, nor is it endowed with sense-perception nor is it rational or intellective or administered by providence. The heavenly realm in fact shares in all these (characteristics), for it contains ensouled spheres which are endowed with life. The earthly realm, however, (shares) in none of them, but possesses its well-ordered state contingently and not primarily.

### 4. Whether the cosmos is indestructible

- 1 Pythagoras and Heraclitus (declare that) the cosmos is generated in thought, but not in time.
- 2 The Stoics (declare that) the cosmos has come into being through the agency of God.
- 3 Epidicus (declares that) the cosmos has come into being through the agency of nature.
- 4 Archelaus (declares that) the cosmos has been produced through the agency of warmth and ensoulment.
- 5 Xenophanes and Parmenides and Melissus (declare that) the cosmos is ungenerated and everlasting and indestructible.
- 6 But there are those who declare that its ordering is eternal, yet declare that there are periodic times in accordance with which all things come into being in exactly the same way and preserve the same disposition and ordering of the cosmos.
- 7 Anaximander and Anaximenes and Anaxagoras and Archelaus and Diogenes and Leucippus (declare that) the cosmos is destructible.
- 8 The Stoics too (declare that) the cosmos is destructible, but (this occurs) in the conflagration.

- 9 Πλάτων φθαρτὸν μὲν τὸν κόσμον, ὅσον ἐπὶ τῇ φύσει, αἰσθητὸν γὰρ εἶναι, διότι καὶ σωματικόν<sup>6</sup>, οὐ μὴν φθαρησόμενόν γε προνοία καὶ συνοχῇ θεοῦ.
- 10 Ἀριστοτέλης τὸ ὑπὸ τὴν σελήνην τοῦ κόσμου μέρος παθητόν<sup>7</sup>, ἐν ᾧ καὶ τὰ περίγεια κηραίνεται<sup>8</sup>.
- 11 Ἐμπεδοκλῆς τὸν κόσμον φθείρεσθαι<sup>9</sup> κατὰ τὴν ἀντεπικράτειαν τοῦ νείκους καὶ τῆς φιλίας.
- 12 Δημόκριτος φθείρεσθαι τὸν κόσμον τοῦ μείζονος τὸν μικρότερον νικῶντος.
- 13 Ἐπίκουρος πλείστοις τρόποις τὸν κόσμον φθείρεσθαι· καὶ γὰρ ὡς ζῶον καὶ ὡς φυτὸν καὶ πολλαχῶς<sup>10</sup>.

1 ex S; PCyrlQ Πυθαγόρας καὶ οἱ Στωικοὶ γενητὸν ὑπὸ θεοῦ τὸν κόσμον, E Πυθαγόρας καὶ Πλάτων καὶ οἱ Στωικοὶ, G τὸν Πυθαγόραν καὶ Πλάτωνα

2 coniecimus ex P

3 ἐμψυχρίας conj. Meineke, secuti Diels *DG* et Wachsmuth, reiecit Diels *VS*

4 secl. Diels, Wachsmuth

5 secl. Diels, fortasse recte

6 σωματικός Cyril

7 PEGCyril παθητόν, S Diels παθητικόν

8 Cyril codd. περαίνεται, Q κεράννυται ut vid.

9 (γίνεσθαι καὶ) φθείρεσθαι conj. Sturz, secuti Diels *DG* Wachsmuth, non recte

10 ex S, PEQCyril post lemma Platonis Ἐπίκουρος φθαρτὸν, ὅτι καὶ γενητὸν, ὡς ζῶον ὡς φυτὸν

§ 1a–; § 1b 22A10 DK; § 3–; § 4 60A14 DK; § 5a 21A37 DK; § 5b 28A36 DK; § 5c 30A9 DK; § 6 cf. *SVF* 2.597; § 7a 12A67 DK; § 7b–; § 7c 59A65 DK; § 7d 60A14 DK; § 7e 64A10 DK; § 7f 67A22 DK; § 8 *SVF* 2.575; § 9–; § 10 T19 Gigon; § 11 31A52 DK; § 12 68A84 DK; § 13 fr. 305 Usener

ε'. Πόθεν<sup>1</sup> τρέφεται ὁ κόσμος

- 1 Ἀριστοτέλης· εἰ τρέφεται ὁ κόσμος, καὶ φθαρήσεται· ἀλλὰ μὴν οὐδεμιᾶς τινοσ<sup>2</sup> ἐπιδεῖται<sup>3</sup> τροφῆς· διὰ τοῦτο καὶ αἰδίοις.
- 2 Πλάτων αὐτὸν αὐτῷ τὸν κόσμον ἐκ τοῦ φθίνοντος κατὰ μεταβολὴν<sup>4</sup> τὸ τρέφον παρέχεσθαι.
- 3 Φιλόλαος διττὴν εἶναι τὴν φθοράν<sup>5</sup>, τὸ μὲν<sup>6</sup> ἐξ οὐρανίου<sup>7</sup> πυρὸς ὁύνετος, τὸ δ' ἐξ<sup>8</sup> ὕδατος σεληνιακοῦ περιστροφῇ τοῦ ἀέρος<sup>9</sup> ἀποχυθέντος<sup>10</sup>· καὶ τούτων<sup>11</sup> εἶναι τὰς ἀναθυμιάσεις τροφὰς τοῦ κόσμου.

1 Eī P<sup>2</sup>

2 om. SE Diels

3 δεῖται S

4 κατὰ μεταβολὴν om. Q

5 τοῦ κόσμου add. S<sup>a</sup> (et Q<sup>2</sup>)

6 τότε μὲν ... τότε δέ PEQS<sup>a</sup>, τὸ μὲν ... τὸ δέ GS<sup>b</sup> Diels Wachsmuth Huffman

- 9 Plato (declares that) the cosmos is destructible as far as its nature is concerned, for it is sense-perceptible—since it is corporeal as well—but that through the providence and supervision of God it will certainly not be destroyed.
- 10 Aristotle (declares that) the part of the cosmos below the moon is passible, in which the things on earth perish too.
- 11 Empedocles (declares that) the cosmos is destroyed in accordance with the successive dominance of strife and friendship.
- 12 Democritus (declares that) the cosmos is destroyed when the larger (object) defeats the smaller one.
- 13 Epicurus (declares that) the cosmos is destroyed in very many ways, such as happens in the case of an animal or of a plant, or in numerous other ways.

5. Where does the cosmos obtain its nourishment from

- 1 Aristotle: if the cosmos obtains nourishment, it will also be subject to destruction; but it is certainly not in need of any nourishment; for this reason it is everlasting as well.
- 2 Plato (declares that) the cosmos of its own accord provides nourishment for itself from that which decays through transformation.
- 3 Philolaus (declares that) there is a double (form of) destruction, in the one case from heavenly fire that has rushed (down), in the other case from moon-water that has been poured forth by the conversion of the air; and the exhalations of these are nourishment for the cosmos.

- 7 conj. Corsinus, ἐξ οὐρανοῦ PEGQS<sup>b</sup> ἐξ ὑγροῦ S<sup>a</sup>  
 8 ἐξ reiecit Usener  
 9 ἀστέρως ὁυέντος S<sup>a</sup> ἀστέρως P<sup>1</sup>, 'infolge des Mondwechsels' Q  
 10 περὶ τοὺς ἀστέρας ἀποχεομένου G  
 11 del. S<sup>b</sup>Q, τοῦτου conj. Capelle

§1 T19 Gigon; §2-; §3 44A18 DK

⟨ε<sup>+</sup>. Ποῦ ἔχει τὸ ἡγεμονικὸν ὁ κόσμος⟩<sup>1</sup>

- 1 Πλάτων τὸ ἡγεμονικὸν τοῦ κόσμου ἐν οὐρανῷ τίθεται<sup>2</sup>.  
 2 Κλέανθης ὁ Στωικὸς ἐν ἡλίῳ<sup>3</sup>.  
 3 Ἀρχέδημος ἐν γῇ<sup>4</sup>.  
 4 Φιλόλαος ἐν τῷ μεσαιτάτῳ πυρί, ὅπερ τρόπεως δίκην προὑπεβάλλετο  
 τῇ τοῦ παντός ⟨σφαίρα⟩<sup>5</sup> ὁ δημιουργὸς θεός.

- 1 caput intercidit in P: titulum excerpsit e S titulo Diels  
 2 coniecimus e S; vide supra  
 3 ἔφησεν εἶναι τὸ ἡγεμονικὸν τοῦ κόσμου addidit S  
 4 τὸ ἡγεμονικὸν τοῦ κόσμου ὑπάρχειν ἀπεφάνετο addidit S  
 5 Heeren Diels *DG* Wachsmuth; mss. τῆς τοῦ παντός; Diels *VS* Huffman τῆς τοῦ  
 παντός ⟨σφαίρας⟩

§1-; §2 *SVF* 1.499; §3 *SVF* fr. 15; §4 44A17 DK

ζ'. Ἀπὸ ποίου πρώτου στοιχείου<sup>1</sup> ἤρξατο κοσμοποιεῖν<sup>2</sup> ὁ θεός<sup>3</sup>

- 1 οἱ φυσικοὶ καὶ οἱ Στωικοὶ<sup>4</sup> ἀπὸ γῆς ἄρξασθαι φασι τὴν γένεσιν τοῦ  
 κόσμου καθάπερ ἀπὸ κέντρου· ἀρχὴ δὲ σφαίρας τὸ κέντρον.  
 2 Πυθαγόρας ἀπὸ πυρὸς καὶ τοῦ πέμπτου στοιχείου.  
 3 Ἐμπεδοκλῆς<sup>5</sup> τὸν μὲν αἰθέρα πρῶτον διακριθῆναι, δεύτερον δὲ τὸ πῦρ  
 ἐφ' ᾧ τὴν γῆν, ἐξ ἧς ἄγαν περισφιγγομένης τῇ ῥύμῃ τῆς περιφορᾶς<sup>6</sup>  
 ἀναβλύσαι τὸ ὕδωρ· ἐξ οὗ ⟨ἀνα⟩θυμιαθῆναι<sup>7</sup> τὸν ἀέρα καὶ γενέσθαι  
 τὸν μὲν οὐρανὸν ἐκ τοῦ αἰθέρος<sup>8</sup> τὸν δ' ἥμιον ἐκ τοῦ πυρὸς, πλιηθῆ-  
 ναι<sup>9</sup> δ' ἐκ τῶν ἄλλων τὰ περίγεια.  
 4 Πλάτων τὸν ὄρατὸν κόσμον<sup>10</sup> γεγονέναι πρὸς<sup>11</sup> παράδειγμα τοῦ νοη-  
 τοῦ κόσμου· τοῦ δ' ὄρατοῦ κόσμου προτέραν μὲν εἶναι τὴν ψυχὴν,  
 μετὰ δὲ ταύτην<sup>12</sup> τὸ σωματοειδὲς τὸ ἐκ πυρὸς μὲν καὶ γῆς πρῶτον,  
 ὕδατος δὲ καὶ ἀέρος δεύτερον<sup>13</sup>.  
 5 Πυθαγόρας πέντε σχημάτων ὄντων στερεῶν, ἅπερ καλεῖται καὶ μαθη-  
 ματικά, ἐκ μὲν τοῦ κύβου φησὶ γεγονέναι τὴν γῆν, ἐκ δὲ τῆς πυραμί-  
 δος τὸ πῦρ, ἐκ δὲ τοῦ ὀκταέδρου τὸν ἀέρα, ἐκ δὲ τοῦ εἰκοσαέδρου τὸ  
 ὕδωρ, ἐκ δὲ τοῦ δωδεκαέδρου<sup>14</sup> τὴν τοῦ παντός σφαῖραν.  
 6 Πλάτων δὲ καὶ ἐν τούτοις πυθαγορίζει.

5a. Where does the cosmos have its regent part

- 1 Plato places the ruling part of the cosmos in the heaven.
- 2 Cleanthes the Stoic (locates it) in the sun.
- 3 Archedemus (locates it) in the earth.
- 4 Philolaus (locates it) in the innermost fire, which the craftsman god first set under the sphere of the universe like a keel.

6. From what kind of first element did the god make the cosmos

- 1 The physicists and the Stoics (declare that) the genesis of the cosmos started from the earth as from the centre; the centre is the starting-point of a sphere.
- 2 Pythagoras (declares that the genesis of the cosmos started) from fire and the fifth element.
- 3 Empedocles (declares that) first the ether was separated out, second fire and after it the earth. When the earth was excessively constricted by the rush of its revolution, water spouted forth. From it the air was exhaled and the heaven came into being from the ether, the sun from fire, while the earthly regions were condensed from the other (elements).
- 4 Plato (declares that) the visible cosmos came into being in relation to the model of the intelligible cosmos. But in the case of the visible cosmos the soul is prior, and after it there is the corporeal part, consisting first of fire and earth, second of water and air.
- 5 Pythagoras says that, since there are five solid shapes, which are also called mathematical, the earth came into being from the cube, fire from the pyramid, air from the octahedron, water from the icosahedron, and the sphere of the universe from the dodecahedron.
- 6 Plato in these matters too pythagorizes.

- 1 πρώτου P<sup>1</sup>EQ, om. P<sup>2</sup>G, στοιχείου om. E  
 2 ὁ θεός κοσμοποιεῖν EG  
 3 πόθεν ἄρχεται ὁ κόσμος καὶ ἐκ ποίων στοιχείων P<sup>marg</sup>  
 4 coniecimus, vide supra, οἱ Στωικοὶ SAch, οἱ φυσικοὶ P  
 5 Διοκλῆς G  
 6 σφαίρας E  
 7 <ἀνα>θυμαθῆναι conj. Reiske Diels ex G, legit et Q ut videtur  
 8 ἄερος Q  
 9 εἰληθῆναι E  
 10 ὁρατὸν τὸν κόσμον EG Diels  
 11 πρὸς om. S  
 12 μετὰ δὲ ταῦτα E  
 13 πρώτων, δευτέρων P<sup>2</sup>E  
 14 τὸ ὕδωρ ἐκ δὲ τοῦ δωδεκαέδρου om. E

§ 1a–; § 1b *SVF* 2.581; § 2–; § 3 31A50 DK; § 4–; § 5 44A15 DK (Philolaus), non recte; § 6–

#### ζ'. Περὶ τάξεως τοῦ κόσμου<sup>1</sup>

- 1 Παρμενίδης στεφάνας εἶναι περιπεπλεγμένας ἐπαλλήλους, τὴν μὲν ἐκ τοῦ ἀραιοῦ τὴν δ' ἐκ τοῦ πυκνοῦ, μικτὰς δ' ἄλλας ἐκ<sup>2</sup> φωτὸς καὶ σκότους μεταξὺ τούτων· καὶ τὸ περιέχον δὲ πάσας τείχους δίκην στερεὸν ὑπάρχειν, ὅφ' πυρώδης στεφάνῃ· καὶ τὸ μεσαίτατον πασῶν περὶ ὃ πάλιν πυρώδης· τῶν δε συμμιγῶν τὴν μεσαυτάτην ἀπάσαις <ἀρχήν> τε καὶ <αἰτίαν><sup>3</sup> πάσης κινήσεως καὶ γενέσεως ὑπάρχειν, ἦντινα καὶ δαίμονα κυβερνήτην καὶ κληδοῦχον<sup>4</sup> ἐπονομάζει, δίκην τε καὶ ἀνάγκην. καὶ τῆς μὲν γῆς ἀπόκρισιν εἶναι τὸν ἄερα, διὰ τὴν βιαιοτέραν αὐτῆς ἐξατμισθέντα πύλῃσιν, τοῦ δὲ πυρὸς ἀναπνοὴν τὸν ἥλιον καὶ τὸν γαλαξίαν κύκλον· συμμιγῇ δ' ἐξ ἀμφοῖν εἶναι τὴν σελήνην, τοῦ τ' ἄερος καὶ τοῦ πυρὸς. περιστάντος δ' ἀνωτάτῳ πάντων τοῦ αἰθέρος ὑπ' αὐτῷ τὸ πυρῶδες ὑποταγῆναι τοῦθ' ὅπερ κεκλήκαμεν οὐρανόν, ὅφ' ὅ<sup>5</sup> ἤδη τὰ περιγία.
- 2 Λεύκιππος καὶ Δημόκριτος χιτῶνα κύκλῳ καὶ ὑμένα περιτείνουσι τῷ κόσμῳ, διὰ τῶν ἀγκιστροειδῶν ἀτόμων συμπεπλεγμένον<sup>6</sup>.
- 3 Ἐπίκουρος ἐνίων μὲν κόσμων ἀραιὸν τὸ πέρας ἐνίων δὲ πυκνόν<sup>7</sup>, καὶ τούτων τὰ μὲν τινα κινούμενα τὰ δ' ἀκίνητα.
- 4 Πλάτων πῦρ πρῶτον εἶτ' αἰθέρα μεθ' ὃν ἄερα ἐφ' ὃ ὕδωρ, τελευταίαν δὲ γῆν· ἐνίοτε δὲ τὸν αἰθέρα τῷ πυρὶ συνάπτει<sup>8</sup>.
- 5 Ἀριστοτέλης πρῶτον μὲν<sup>9</sup> αἰθέρα<sup>10</sup> ἀπαθῆ, πέμπτον δὴ τι<sup>11</sup> σῶμα· μεθ' ὃν παθητὰ πῦρ ἄερα ὕδωρ<sup>12</sup>· τελευταίαν δὲ γῆν. τούτων δὲ τοῖς μὲν οὐρανίοις ἀποδεδόσθαι<sup>13</sup> τὴν κυκλικὴν κίνησιν, τῶν δ' ὑπ' ἐκεῖνα<sup>14</sup> τεταγμένων τοῖς μὲν κούφοις τὴν ἄνω τοῖς δὲ βαρέσι τὴν κάτω.

## 7. On the order of the cosmos

- 1 Parmenides says there are bands wound around each other, the one made up of the rare, the other of the dense, while others between these are mixed from light and darkness. And that which surrounds them all is solid like a wall. Below it is a fiery band. And the most central (part) is also (solid), around which there is again a fiery band. Of the mixed bands the most central is both the ⟨origin⟩ and the ⟨cause⟩ of all motion and coming into being for all the others. He also calls it directive *daimôn*, holder of the keys, justice and necessity. And the air is what is separated from the earth, vaporized through the earth's stronger condensation, while the sun and the Milky Way are the exhalation of fire. The moon is a mixture of both, of air and fire. The ether encircles above everything else, and below it the fiery (part) is disposed which we call heaven, below which the earthly regions have their place.
- 2 Leucippus and Democritus stretch around the cosmos a cloak and a membrane woven together by means of hook-shaped atoms.
- 3 Epicurus (declares that) the limit of some *kosmoi* is rare but of others it is dense, and of these (limits) some are in motion, while others are immobile.
- 4 Plato (declares that) there is first fire, then ether, followed by air, after which there is water, and earth is last. But sometimes he links up ether with fire.
- 5 Aristotle (declares that) impassible ether is first, which is in fact a fifth body. After it (follow) the passible (elements) fire, air, water, and earth is last. And of these to the heavenly (regions) circular motion is given, whereas in the case of the (elements) below them upward (motion is given) to the light ones and downward (motion) to the heavy ones.

- 6 Φιλόλαος πῦρ ἐν μέσῳ περὶ τὸ κέντρον, ὅπερ ἐστὶαν τοῦ παντὸς καλεῖ καὶ Διὸς οἶκον καὶ μητέρα θεῶν, βωμόν τε καὶ συνοχὴν καὶ μέτρον φύσεως· καὶ πάλιν πῦρ ἕτερον ἀνωτάτῳ, τὸ περιέχον. πρῶτον δ' εἶναι φύσει τὸ μέσον, περὶ δὲ τοῦτο δέκα σώματα θεῖα χορεύειν, οὐρανόν, <πέν>τε<sup>15</sup> πλανήτας, μεθ' οὓς ἥλιον, ὑφ' ᾧ σελήνην, ὑφ' ἧ τὴν γῆν, ὑφ' ἧ τὴν ἀντίχθονα, μεθ' ἧ σύμπαντα τὸ πῦρ ἐστίας περὶ τὰ κέντρα τάξιν ἐπέχον. τὸ μὲν οὖν ἀνωτάτῳ μέρος τοῦ περιέχοντος, ἐν ᾧ τὴν εἰλικρίνειαν εἶναι τῶν στοιχείων, Ὀλυμπον καλεῖ· τὰ δὲ ὑπὸ τὴν τοῦ Ὀλύμπου φοράν, ἐν ᾧ τοὺς πέντε πλανήτας μεθ' ἡλίου καὶ σελήνης τετάχθαι, κόσμον. τὸ δ' ὑπὸ τούτοις ὑποσέληνόν τε καὶ περιγέιον μέρος, ἐν ᾧ τὰ τῆς φιλομεταβόλου γενέσεως, Οὐρανόν. καὶ περὶ μὲν τὰ τεταγμένα τῶν μετεώρων γίνεσθαι τὴν σοφίαν, περὶ δὲ τῶν γινομένων τὴν ἀταξίαν τὴν ἀρετὴν, τελείαν μὲν ἐκείνην, ἀτελεῖ δὲ ταύτην.
- 7 Ἐμπεδοκλῆς μὴ διὰ παντὸς ἐστῶτας<sup>16</sup> εἶναι μηδ' ὠρισμένους τοὺς τόπους τῶν στοιχείων, ἀλλὰ πάντα τοὺς<sup>17</sup> ἀλλήλων μεταλαμβάνειν.

- 1 P<sup>2</sup>EGQS<sup>1</sup>, om. τοῦ P<sup>1</sup> Mau Lachenaud, τῆς τοῦ κόσμου τάξεως S<sup>2</sup> (Laur.)  
 2 om. S  
 3 τε καὶ S, τοκέα Davis Diels DG, αἰτίαν Krische Wachsmuth, ἀρχὴν τε καὶ αἰτίαν Diels VS ex Simp.  
 4 κληροῦχον S, κληδοῦχον omnes editores, cf. fr. 1.14 DK  
 5 Krische, ὑφ' οὗ S  
 6 διὰ ... συμπεπλεγμένον abest in ʒ  
 7 ἔνια δὲ πυκνά E  
 8 συνάπτει τῷ πυρί E  
 9 om. S  
 10 ἀέρα P<sup>1</sup>, ἀέρα ἀπαθῆ τὸν αἰθέρα P<sup>2</sup>  
 11 δέ τι P, δέ E, corr. Duebner  
 12 ord. inv. Q  
 13 ἀποδιδόναι P<sup>2</sup>  
 14 ἐπ' ἐκεῖνα P<sup>2</sup>  
 15 coniecimus, mss. οὐρανόν τε, τοὺς ε conj. Diels, quem secutus Wachsmuth, om. Huffman  
 16 ἐστῶτα (sc. στοιχεῖα) Q  
 17 locus corruptus secundum editores; sed sanus (πάντα sc. τὰ στοιχεῖα), cf. Plato *Prot.* 329c

§1 28A37 DK; §2 67A23 DK; §3 fr. 303 Usener; §4—; §5 T19 Gigon; §6 44A16 DK; §7 31A35 DK



- 6 Philolaus (declares that) there is fire in the middle around the centre, which he calls the universe's hearth and Zeus' house and the gods' mother, altar and maintenance (or continuity) and measure of nature. And again there is another highest fire, that which surrounds (the universe). The centre is first by nature, and around this ten divine bodies dance: the heaven, the five planets, after them the sun, under it the moon, under it the earth, under it the counter-earth, and after all of them there is fire, which has the position of the hearth in relation to the centres. Moreover he calls the highest part of the surrounding (region) Olympus, in which he says the purity of the elements exists, while the (region) under the orbit of Olympus, in which the five planets together with the sun and the moon are positioned, (he calls) Kosmos. The sublunary and earthly part below these, in which the (realm) of change-loving generation (is located), (he calls) Heaven. He also declares that wisdom arises concerning what is ordered in the regions on high, whereas excellence arises concerning the disorder of what comes into being, and the former is complete, but the latter incomplete.
- 7 Empedocles (declares that) the locations of the elements are not completely fixed or determined, but (they) all share in the locations of each other.

η'. Τίς ἡ αἰτία τοῦ τὸν κόσμον ἐγκλιθῆναι<sup>1</sup>

- 1 Διογένης Ἀναξαγόρας<sup>2</sup> μετὰ τὸ συστήναι τὸν κόσμον καὶ τὰ ζῶα ἐκ τῆς γῆς ἐξαγαγεῖν<sup>3</sup> ἐγκλιθῆναι<sup>4</sup> πῶς τὸν κόσμον ἐκ τοῦ αὐτομάτου εἰς τὸ μεσημβρινὸν αὐτοῦ μέρος, ἴσως ὑπὸ προνοίας, ἵν' ἃ μὲν [τινα]<sup>4</sup> ἀοίκητα γένηται ἃ δ' οἰκητὰ μέρη τοῦ κόσμου κατὰ ψῦξιν καὶ ἐκπύρωσιν καὶ εὐκρασίαν<sup>5</sup>.
- 2 Ἐμπεδοκλῆς τοῦ ἀέρος<sup>6</sup> εἷξαντος τῇ τοῦ ἡλίου ὀρμῇ, ἐγκλιθῆναι<sup>7</sup> τὰς ἄρκτους<sup>8</sup>, καὶ τὰ μὲν<sup>9</sup> βόρεια ὑψωθῆναι τὰ δὲ νότια ταπεινωθῆναι, καθ' ὃ καὶ τὸν ὅλον κόσμον.

1 ἐγκεκλίσθαι P<sup>2</sup>

2 Διογένης καὶ Ἀναξαγόρας ἔφησαν S

3 καὶ τὰ ζῶα ἐκ τῆς γῆς ἐξαγαγεῖν om. Q

4 τὰ μὲν ... τὰ δὲ E, τινα secl. Diels Mau Lachenaud

5 PSQ, κατὰ ἐκπύρωσιν καὶ εὐκρασίαν καὶ ψῦξιν E, κατὰ ἐκπύρωσιν καὶ ψῦξιν G

6 πυρός G

7 ἐπικλιθῆναι E, ἐπικλῖναι G

8 ἐγκλιθῆναι τὰς ἄρκτους om. Q

9 om. E

§ 1a 64A11 DK; § 1b 59A67 DK; § 2 31A58 DK

θ'. Περὶ τοῦ ἐκτὸς τοῦ κόσμου, εἰ ἔστι κενόν<sup>1</sup>

- 1 οἱ μὲν ἀπὸ Πυθαγόρου<sup>2</sup> ἐκτὸς εἶναι τοῦ κόσμου κενόν, εἰς δὲ ἀναπνεῖ ὁ κόσμος καὶ ἐξ οὗ.
- 2 οἱ δὲ Στωικοὶ εἶναι κενόν<sup>3</sup>, εἰς δὲ κατὰ τὴν ἐκπύρωσιν<sup>4</sup> ἀναλύεται<sup>5</sup>, ἄπειρον<sup>6</sup>.
- 3 Ποσειδώνιος οὐκ ἄπειρον<sup>7</sup>, ἀλλ' ὅσον<sup>8</sup> αὐταρκες εἰς τὴν διάλυσιν<sup>9</sup>.
- 4 Πλάτων Ἀριστοτέλης<sup>10</sup> μήτ' ἐκτὸς τοῦ κόσμου μήτ' ἐντὸς μηδὲν εἶναι κενόν<sup>11</sup>.

1 PQ (sed vide Daiber), περὶ τοῦ ἐκτὸς EG

2 οἱ Πυθαγόρου S, (ἀπὸ) add. Wachsmuth, Diels sec.

3 εἶναι κενόν S (et Q<sup>2</sup>), om. PE

4 τῇ ἐκπύρωσει E, om. Q

5 ἄπειρον E, τὸ ἄπειρον P, ἄπειρος ὢν S, quod emend. Heeren in ἄπειρον ὄν

6 add. ὁ κόσμος S

7 ἔφησε τὸ ἐκτὸς τοῦ κόσμου οὐκ ἄπειρον S

8 καθ' ὅσον conj. Kidd

9 διάβασιν E

10 EQ, ἐν τῷ πρώτῳ Περὶ κενοῦ Ἀριστοτέλης ἔλεγεν εἶναι κενόν Πλάτων ... P; vide supra

11 P, κενὸν δὲ μὴ εἶναι μήτε ἐκτὸς τοῦ κόσμου μήτε ἐντὸς ἐν τῷ κόσμῳ S, cf. Q

§ 1-; § 2 SVF 2.609; § 3 F84, 97 E.-K., F302 Theiler; § 4a-; § 4b T19 Gigon

## 8. What is the cause of the cosmos having been tilted

- 1 Diogenes and Anaxagoras (declare that) after the cosmos had been formed and had produced the animals from the earth, the cosmos somehow of its own accord was tilted towards its mid-day region; (this occurred) perhaps through the agency of providence, so that some of the cosmos' parts are uninhabitable, but others are habitable in virtue of chilling and excessive heating and temperate climate.
- 2 Empedocles (declares that), when the air gave way through the onrush of the sun, the (north and south) poles were tilted, and the northern regions were lifted up, but the southern regions were lowered, just as was the case for the entire cosmos.

## 9. On what is outside the cosmos, whether a void exists

- 1 Pythagoras and his followers (declare that) a void outside the cosmos exists, into which and from which the cosmos breathes.
- 2 The Stoics (declare that) a void exists, into which the cosmos dissolves in the conflagration, (and which is) infinite.
- 3 Posidonius (declares that it is) not infinite, but to the extent (that is) sufficient for the (cosmos') dissolution.
- 4 Plato and Aristotle (declare that) there is no void either outside the cosmos or inside it.

ι'. Τίνα δεξιὰ τοῦ κόσμου καὶ τίνα ἀριστερά<sup>1</sup>

- 1 Πυθαγόρας Πλάτων Ἀριστοτέλης δεξιὰ τοῦ κόσμου τὰ ἀνατολικά μέρη, ἀφ' ὧν ἡ ἀρχὴ τῆς κινήσεως<sup>2</sup>, ἀριστερὰ δὲ τὰ δυτικά. οὐθ' ὕψος<sup>3</sup> δέ φασιν οὔτε βάθος ἔχειν τὸν κόσμον, καθ' ὃν λόγον ὕψος μὲν λέγεται τὸ κάτωθεν ἄνω διάστημα, βάθος δὲ τὸ ἄνωθεν κάτω. μηδὲν γὰρ εἶναι τῶν οὕτως διαστημάτων λεγομένων περὶ τὸν κόσμον διὰ τὸ περὶ τὸ ἑαυτοῦ μέσον αὐτὸν συνεστάναι, ἀφ' οὗ πρὸς ἅπαν ἐστι καὶ πρὸς ὃ<sup>4</sup> πανταχόθεν ταυτό<sup>5</sup>.
- 2 Ἐμπεδοκλῆς δεξιὰ μὲν τὰ κατὰ τὸν θερινὸν τροπικόν, ἀριστερὰ δὲ τὰ κατὰ τὸν χειμερινόν.

1 καὶ τίνα ἀριστερά om. G

2 διὰ τὰς ἀνατολάς S, secl. Diels

3 οὐθ' ὕψος—πανταχόθεν ταυτό, dubia (vide supra)

4 πρὸς τό S, emend. Diels

5 τοῦτο S, emend. Heeren

§ 1a—; § 1b—; § 1c T19 Gigon; § 2 31A50 DK

ια'. Περὶ οὐρανοῦ, τίς ἡ τούτου οὐσία<sup>1</sup>

- 1 Ἀναξίμενης<sup>2</sup> τὴν περιφορὰν τὴν ἑξωτάτω γήινην<sup>3</sup>.
- 2 Ἐμπεδοκλῆς στερέμνιον εἶναι τὸν οὐρανὸν ἔξ ἄερος συμπαγέντος<sup>4</sup> ὑπὸ πυρὸς κρυσταλλοειδῶς, τὸ πυρῶδες καὶ τὸ<sup>5</sup> ἀερῶδες ἐν ἑκατέρῳ τῶν ἡμισφαιρίων περιέχοντα.
- 3 Ἀναξίμανδρος ἐκ θερμοῦ καὶ ψυχροῦ μίγματος.
- 4 Παρμενίδης Ἡράκλειτος Στράτων Ζήνων πύρινον.
- 5 Ἀριστοτέλης ἐκ πέμπτου σώματος<sup>6</sup>.

1 P, περὶ τῆς οὐρανοῦ οὐσίας SQ, περὶ οὐρανοῦ EG, cf. Ach τίς οὐσία οὐρανοῦ

2 Ἀναξίμενης καὶ Παρμενίδης S

3 P, γῆν εἶναι G, τῆς γῆς εἶναι S, τῆς ἔξω ζώνης εἶναι E, 'daß die Substanz des Himmels dampffartig und außerhalb von ihm (dem Himmel) verlaufende Bewegung an seiner äußersten Grenze ist' Q, γῆς εἶναι conj. Diels ex G et S

4 συμπαγέντα Q ut vid.

5 τό om. PE, rest. Diels Mau

6 textus lemmatum 3–5 in P non sanus; vide supra

§ 1 13A13 DK, cf. 28A38; § 2 31A51 DK; § 3 12A17a DK; § 4a 28A38 DK; § 4b 22A10 DK; § 4c fr. 84 Wehrli; § 4d *S/F* 1.116; § 5 T19 Gigon

10. What are the right (parts) of the cosmos and what are the left

- 1 Pythagoras, Plato and Aristotle (declare that) the right parts of the cosmos are the eastern regions, from which its movement has its origin, while the western regions are its left (parts). But they say that the cosmos has neither height nor depth in the sense that height is said to be the dimension upwards from below and depth is the dimension downwards from above. For, (they say), none of the dimensions understood in this way are relevant to the cosmos because it is established around its own centre, from which there is the same (distance) to every (part) and towards which it is the same from every point.
- 2 Empedocles (declares that) the regions at the summer solstice are the right parts (of the cosmos), while the regions at the winter solstice are the left parts.

11. On the heaven, what is its substance

- 1 Anaximenes (declares that) the outermost periphery is earthy.
- 2 Empedocles (declares that) the heaven is solid, consisting of air that has been compacted together by fire in crystalline fashion, (and) containing the fiery (element) and the airy (element) in each of the hemispheres.
- 3 Anaximander (declares that the heaven consists) of a hot and a cold mixture.
- 4 Parmenides, Heraclitus, Strato and Zeno (declare that the heaven is) fiery.
- 5 Aristotle (declares that the heaven consists) of a fifth body.

ιβ'. Περὶ διαιρέσεως οὐρανοῦ, εἰς πόσους κύκλους διαιρεῖται<sup>1</sup>

- 1 Θαλῆς Πυθαγόρας<sup>2</sup> οἱ ἀπ' αὐτοῦ μεμερίσθαι τὴν τοῦ παντός οὐρανοῦ σφαῖραν εἰς κύκλους πέντε, οὓσιν αὖτε προσαγορεύουσι ζώνας· καλεῖται δ' αὐτῶν ὁ μὲν ἄρκτικός τε καὶ ἀειφανής, ὁ δὲ θερινὸς τροπικός, ὁ δ' ἰσημερινός, ὁ δὲ χειμερινὸς τροπικός, ὁ δ' ἀνταρκτικός τε καὶ ἀφανής· λοξὸς δὲ τοῖς τρισὶ μέσοις ὁ καλούμενος ζωδιακὸς ὑποβέβληται<sup>3</sup>, παρεπιψαύων<sup>4</sup> τῶν μέσων τριῶν· πάντας δ' αὐτοὺς ὁ μεσημβρινὸς πρὸς ὀρθὰς ἀπὸ τῶν ἄρκτων ἐπὶ τὸ ἀντίξουν<sup>5</sup> τέμνει.
- 2 Πυθαγόρας<sup>6</sup> πρῶτος ἐπινενοηκέναι λέγεται τὴν λόξωσιν τοῦ ζωδιακοῦ κύκλου, ἣν τινα Οἰνοπίδης ὁ Χῖος ὡς ἰδίαν ἐπίνοιαν<sup>7</sup> σφετερίζεται.

1 Περὶ διαιρέσεως οὐρανοῦ GQ, cf. S

2 καί add. S

3 ἐν τοῖς μέσοις ... ὑποκέκληται S, ὑπεκέκληται conj. Heeren, ἐν del. Heeren Diels

4 παραψαύων S

5 ἀντικρὺ S

6 δέ add. G

7 ἐπίνοιαν ὡς ἰδίαν S, ὡς ἐπίνοιαν ἰδίαν G

§ 1a 11A13c DK; § 1b–; § 2a–; § 2b 41.7 DK

ιγ'. Τίς ἡ οὐσία τῶν ἄστρον πλανητῶν καὶ ἀπλανῶν<sup>1</sup>

- 1 Θαλῆς γεώδη μὲν ἔμπυρα δὲ τὰ ἄστρα.
- 2 Ἐμπεδοκλῆς πύρινα ἐκ τοῦ πυρῶδους, ὅπερ ὁ ἀήρ<sup>2</sup> ἐν ἑαυτῷ περιέχων ἐξανέθλιψε<sup>3</sup> κατὰ τὴν πρώτην διάκρισιν· τοὺς μὲν ἀπλανεῖς ἀστέρας συνδεδέσθαι τῷ κρυστάλλῳ, τοὺς δὲ πλανήτας<sup>4</sup> ἀνεῖσθαι.
- 3 Ἀναξάγορας τὸν περικείμενον αἰθέρα<sup>5</sup> πύρινον μὲν εἶναι κατὰ τὴν οὐσίαν, τῇ δ' εὐτονίᾳ τῆς περιδινήσεως ἀναρπάσαντα<sup>6</sup> πέτρους ἀπὸ<sup>7</sup> τῆς γῆς καὶ καταφλέξαντα τούτους ἡσπερικέναι<sup>8</sup>.
- 4 Διογένης κισσηρώδη τὰ ἄστρα, διαπνοὰς δ' αὐτὰ νομίζει τοῦ κόσμου<sup>9</sup>· εἶναι δὲ διάπυρα<sup>10</sup>.
- 5 Δημόκριτος πέτρους.
- 6 Ἀρχέλαος μύδρους [ἔφησεν εἶναι τοὺς ἀστέρας]<sup>11</sup>, διαπύρους δέ.
- 7 Ἀναξίμανδρος πηλὴματα ἀέρος τροχοειδῆ, πυρὸς ἔμπλεα, κατὰ τι μέρος ἀπὸ στομίων ἐκπνέοντα φλόγας.
- 8 Παρμενίδης καὶ Ἡράκλειτος πηλὴματα πυρός<sup>12</sup>.
- 9 Ἀναξίμενης πυρίνην μὲν τὴν φύσιν τῶν ἄστρον, περιέχειν δέ τινα καὶ γεώδη σώματα συμπεριφερόμενα τούτοις ἀόρατα.

12. On the division of heaven, into how many circles is it divided

- 1 Thales, Pythagoras and his followers (declare that) the sphere of the entire heaven has been divided into five circles, to which they give the name 'zones'. Of these (the first) is called 'the arctic and always appearing', (the second) 'the summer tropic', (the third) 'the equatorial', (the fourth) 'the winter tropic', and (the last) 'the antarctic and invisible'. In relation to the three middle (circles), the so-called zodiac (circle) has been placed diagonally, touching the three middle (circles). But the meridian cuts all of them at right angles from the arctic (regions) to its opposite.
- 2 Pythagoras is said to have been the first to have recognized the tilting of the zodiac circle, which Oenopides of Chios appropriates as his own idea.

13. What is the substance of the heavenly bodies\*, both planets and fixed stars

- 1 Thales (declares that) the heavenly bodies are earthy but inflamed.
- 2 Empedocles (declares that they are) fiery, made from fiery (material), which the air enfolded within itself and squeezed out in the first separation; the fixed heavenly bodies became stuck to the crystalline (heaven) but the planets were released.
- 3 Anaxagoras (declares that) the surrounding ether is fiery in nature, but through the vigour of the whirling movement it snatched up rocks from the earth, ignited these and made them into heavenly bodies.
- 4 Diogenes (declares that) the heavenly bodies are sponge-like, and he considers them to be the respiratory vents of the cosmos; they are also inflamed.
- 5 Democritus (declares that they are) rocks.
- 6 Archelaus (declares that they are) clumps of iron, but inflamed.
- 7 Anaximander (declares that they are) wheel-like condensations of air, filled with fire, partly expelling flames from vents.
- 8 Parmenides and Heraclitus (declare that they are) condensations of fire.
- 9 Anaximenes (declares that) the nature of the heavenly bodies is fiery, but that it also includes some earthy bodies which are borne around with these and are invisible.

- 10 Διογένης συμπεριφέρεσθαι [δὲ]<sup>13</sup> τοῖς φανεροῖς ἄστροις ἀφανεῖς μὲν λίθους, πίπτοντας δὲ πολλάκις ἐπὶ τὴν γῆν σβέννυσθαι, καθάπερ τὸν ἐν Αἰγὸς ποταμοῖς πυροειδῶς κατενεχθέντα ἀστέρα πέτρινον.
- 11 Πλάτων ἐκ μὲν τοῦ πλείστου μέρους πυρίνους, μετέχοντας δὲ καὶ τῶν ἄλλων στοιχείων κόλλης δίκην<sup>14</sup>.
- 12 Ἀριστοτέλης ἐκ τοῦ πέμπτου σώματος<sup>15</sup>.
- 13 Ξενοφάνης ἐκ νεφῶν μὲν<sup>16</sup> πεπτρωμένων, σβεννυμένους δὲ καθ' ἑκάστην ἡμέραν ἀναξωπυρεῖν νύκτωρ, καθάπερ τοὺς ἀνθρακας· τὰς γὰρ ἀνατολὰς καὶ τὰς δύσεις ἐξάψεις εἶναι καὶ σβέσεις.
- 14 Ἡρακλείδης καὶ οἱ Πυθαγόρειοι ἕκαστον τῶν ἀστέρων κόσμον ὑπάρχειν, γῆν περιέχοντα ἄερα τε καὶ αἰθέρα<sup>17</sup> ἐν τῷ ἀπείρῳ αἰθέρι· ταῦτα δὲ τὰ δόγματα ἐν τοῖς Ὀρφικοῖς φέρεται· κοσμοποιοῦσι γὰρ ἕκαστον τῶν ἀστέρων.
- 15 Ἐπίκουρος οὐδὲν ἀπογινώσκει τούτων, ἐχόμενος τοῦ ἐνδεχομένου.

- 1 E, cf. G (om. ἄστρον), add. καὶ πῶς συνέστη P, τίς ἢ οὐσία τῶν ἄστρον Q, περὶ οὐσίας ἄστρον S
- 2 αἰθήρ P<sup>1</sup>
- 3 ἐξανέλαμψεν ἥτοι ἐξανέθλιψε S
- 4 πλανῶντας E, πλάνους ὄντας conj. Mras
- 5 ἄερα E
- 6 ἀνασπάσαντα v.l. E, cf. T ἀνασπασθῆναι
- 7 ἐκ P
- 8 P, ἥστερωκέει S
- 9 τοῦ κόσμου om. T
- 10 εἶναι δὲ διάπυρα S, intercidit in P
- 11 ἔφησεν εἶναι τοὺς ἀστέρας addidit S modo solito
- 12 τὰ ἄστρο add. S ipse
- 13 δέ addidit S
- 14 κόλλης δίκην om. S
- 15 γεγενῆσθαι τὰ ἄστρο add. S ipse (cf. cap. 11)
- 16 E, om. PG
- 17 καὶ αἰθέρα om. S, secl. Diels, Kern, γῆν, ἄερα τε καί, ἀπείρῳ om. E

§1 11A17a DK; §2 31A53–54 DK; §3 59A71 DK; §4 64A12 DK; §5 68A85 DK; §6 60A15 DK; §7 12A18 DK; §8a 28A39 DK; §8b 22A11 DK; §9 13A14 DK; §10 64A12 DK; §11–; §12 T19 Gigon; §13 21A38 DK; §14a fr. 113 Wehrli, 75 Schütrumpf; §14b cf. adn. 44A18 DK; §14c fr. 22 Kern, fr. 30 F Bernabé; §15 cf. adn. ad D.L. 10.90, 382.11 Usener

ιδ'. Περὶ σχημάτων<sup>1</sup> ἀστέρων

- 1 οἱ Στωικοί<sup>2</sup> σφαιρικούς τοὺς ἀστέρας, καθάπερ τὸν κόσμον καὶ ἥλιον καὶ σελήνην<sup>3</sup>,
- 2 Κλεάνθης<sup>4</sup> κωνοειδεῖς.



- 10 Diogenes (declares that) together with the visible heavenly bodies invisible stones are borne around, and that often they fall to the earth and are quenched, just as in the case of the heavenly body in the form of a rock (i.e. meteorite) that descended in a fire-like manner at Aegospotami.
- 11 Plato (declares that the heavenly bodies are) for the most part fiery, but also partake in the other elements in the manner of glue.
- 12 Aristotle (declares that they are made) from the fifth body.
- 13 Xenophanes (declares that they consist) of ignited clouds, and that every day they are quenched and (then) re-ignite at night, just like coals; for the risings and settings (of the heavenly bodies) are (in fact) ignitions and quenchings.
- 14 Heraclides and the Pythagoreans (declare that) each of the heavenly bodies exists as a cosmos, including an earth, air and ether in the unlimited ether. These doctrines are conveyed in the Orphic (writings), for they (too) make each of the heavenly bodies into a cosmos.
- 15 Epicurus does not reject any of these (views), holding fast to what is possible.

\* on the problem of whether to translate ἀστήρ as ‘star’ or ‘heavenly body’ see the note to ch. 13 in the *Specimen reconstructionis*.

#### 14. On the shapes of the stars

- 1 The Stoics (declare that) the stars are ball-like, just like the cosmos, the sun and the moon.
- 2 Cleanthes (declares that they are) cone-like.

- 3 Ἀναξιμένης ἥλων δίκην καταπεπηγέναι<sup>5</sup> τῷ χρυσταλλοειδεῖ.  
 4 ἔνιοι δὲ πέταλα εἶναι πύρινα<sup>6</sup>, ὥσπερ ζωγραφήματα.

- 1 σχήματος EP<sup>2</sup>  
 2 οἱ μὲν ἄλλοι S  
 3 καθάπερ τὸν κόσμον καὶ ἥλιον καὶ σελήνην om. S, καὶ σελήνην om. E  
 4 δέ S, cf. T, om. PGQ (lemma totum defuit in E)  
 5 καταπεπηγμένων EQ, καταπεπηγένους corr. Stephanus, prob. M<sup>ras</sup>  
 6 πύρινα εἶναι E, πύρινα om. Q

§1 SVF 2.681; §2 SVF 1.508; §§3–4 I3A14 DK

ιε'. Περὶ τάξεως ἀστέρων

- 1 Ξενοκράτης<sup>1</sup> κατὰ μιᾶς ἐπιφανείας<sup>2</sup> οἶεται κεῖσθαι<sup>3</sup> τοὺς ἀστέρας.  
 2 οἱ δ' ἄλλοι Στωικοί<sup>4</sup> πρὸ τῶν ἐτέρων τοὺς ἐτέρους<sup>5</sup> ἐν ὕψει καὶ βάθει.  
 3 Δημόκριτος τὰ<sup>6</sup> μὲν ἀπλανῆ πρῶτον, μετὰ δὲ ταῦτα τοὺς πλανήτας,  
 ἐφ' οἷς ἥλιον φωσφόρον σελήνην<sup>7</sup>.  
 4 Πλάτων μετὰ τὴν τῶν ἀπλανῶν θέσιν πρῶτον φαίνωνα<sup>8</sup> λεγόμενον  
 τὸν τοῦ Κρόνου, δεύτερον φαέθοντα τὸν τοῦ Διός, τρίτον πυρόεντα  
 τὸν τοῦ Ἄρεος, τέταρτον ἑωσφόρον<sup>9</sup> τὸν τῆς Ἀφροδίτης, πέμπτον  
 στίλβοντα τὸν τοῦ Ἑρμοῦ, ἕκτον ἥλιον, ἑβδομον σελήνην.  
 5 τῶν μαθηματικῶν τινὲς μὲν ὡς Πλάτων, τινὲς δὲ μέσον πάντων τὸν  
 ἥλιον.  
 6 Ἀναξίμανδρος καὶ Μητροδώρος ὁ Χῖος καὶ Κράτης ἀνωτάτω μὲν  
 πάντων τὸν ἥλιον τετάχθαι, μετ' αὐτὸν δὲ<sup>10</sup> τὴν σελήνην, ὑπὸ δ'  
 αὐτοὺς τὰ ἀπλανῆ τῶν ἀστρῶν καὶ τοὺς πλανήτας.  
 7 Παρμενίδης πρῶτον μὲν τάττει τὸν ἑῶν, τὸν αὐτὸν δὲ νομιζόμενον  
 ὑπ' αὐτοῦ καὶ ἑσπερον, ἐν τῷ αἰθέρι· μεθ' ὃν τὸν ἥλιον, ὕφ' ᾧ τοὺς ἐν  
 τῷ πυρώδει ἀστέρας, ὅπερ οὐρανὸν καλεῖ.

- 1 Ξενοφάνης G  
 2 κατὰ μίαν ἐπιφάνειαν E, cf. G (cum lectione κινεῖσθαι)  
 3 κινεῖσθαι P, κεῖσθαι S  
 4 οἱ δὲ ἄλλοι καὶ οἱ Στωικοί S<sup>2</sup>, δέ om. E  
 5 πρὸ τῶν ἐτέρων τοὺς ἐτέρους om. Q  
 6 πρῶτα μὲν τὰ ἀπλανῆ S  
 7 ἐφ' οἷς ἥλιον φωσφόρον σελήνην om. S  
 8 φαίνωνα SEQ (?), φαίνοντα P  
 9 φωσφόρον Q  
 10 δέ om. E

§1 fr. 162 I.–P.; §2 SVF 2.689; §3 68A86 DK; §4–; §5–; §6a I2A18; §6b 70A19 DK; §6c fr. F5a Mette; §7 28A40a DK

- 3 Anaximenes (declares that they) have been affixed to the crystalline (heaven).
- 4 But some (philosophers declare that they) are fiery leaves, like pictures.

15. On the ordering of the heavenly bodies

- 1 Xenocrates thinks that the stars lie on a single plane.
- 2 But the others, the Stoics, (declare that) the ones are placed in front of the others in height and depth.
- 3 Democritus (orders) the fixed stars first, then after them the planets, followed by the sun, the light-bringer, and the moon.
- 4 Plato after the positioning of the fixed stars (orders) first the star of Kronos called 'the Shining one', second the star of Zeus (called) 'the Radiant one', third the star of Ares (called) 'the Fiery one', fourth the star of Aphrodite (called) 'Dawn-bringer', fifth the star of Hermes (called) 'the Gleaming one', sixth the sun, and seventh the moon.
- 5 Of the astronomers some (order the heavenly bodies) as Plato does, others (place) the sun in the middle of all (the planets).
- 6 Anaximander and Metrodorus of Chios and Crates (declare that) the sun has been ordered highest of all (the heavenly bodies), but after it the moon, and below them the fixed stars and the planets.
- 7 Parmenides orders the Dawn-star, which is considered by him to be identical with the Evening-star, as first in the ether; after it the sun, beneath which he places the heavenly bodies (i.e. stars) in the fiery region, which he calls 'heaven'.

ιζ'. Περί τῆς τῶν ἀστέρων φορᾶς καὶ<sup>1</sup> κινήσεως

- 1 Ἀναξαγόρας Δημόκριτος Κλεάνθης ἀπ' ἀνατολῶν ἐπὶ δυσμὰς φέρεσθαι πάντας τοὺς ἀστέρας.
- 2 Ἀλκμαίων καὶ οἱ μαθηματικοὶ τοὺς πλανήτας τοῖς ἀπλανέσιν ἀπὸ δυσμῶν<sup>2</sup> ἐπ' ἀνατολὰς ἀντιφέρεσθαι.
- 3 Ἀριστοτέλης ὑπὸ τῶν σφαιρῶν, ἐφ' ὧν ἕκαστος ἐμβέβηκε<sup>3</sup>, φέρεσθαι.
- 4 Ἀναξίμανδρος ὑπὸ τῶν κύκλων καὶ τῶν σφαιρῶν<sup>5</sup>, ἐφ' ὧν ἕκαστος βέβηκε, φέρεσθαι.
- 5 Ἀναξίμενης οὐχ ὑπὸ τὴν γῆν περὶ αὐτὴν δέ<sup>6</sup> στρέφεσθαι τοὺς ἀστέρας.
- 6 Πλάτων καὶ οἱ μαθηματικοὶ ἰσοδραμεῖν τῷ ἡλίῳ<sup>7</sup> τὸν ἑωσφόρον<sup>8</sup> καὶ τὸν στίλβοντα καὶ συμπεριφέρεσθαι αὐτῷ· καὶ τότε μὲν προανατέλλοντα ἑωσφόρον φαίνεσθαι, τότε δὲ ἐπικαταδυόμενον ἕσπερον καλεῖσθαι.
- 7 Ἀπολλόδωρος ἐν τῷ δευτέρῳ Περί θεῶν Πυθαγορείαν εἶναι τὴν περὶ τοῦ τὸν αὐτὸν εἶναι φωσφόρον τε καὶ ἕσπερον δόξαν.

1 φορᾶς καὶ om. G

2 textus ES, cf. G, τοῖς ἀπλανέσιν ἐναντίως, ἀπὸ γὰρ δυσμῶν P

3 ἕκαστα συμβέβηκε S (testis unicus), ἕκαστος ἐμβέβηκε conj. Diels

4 φέρεσθαι om. S

5 καὶ τῶν σφαιρῶν fortasse delenda, vide supra

6 E, ὁμοίως ὑπὸ τὴν γῆν καὶ περὶ αὐτήν P, οὐχ ὑπὸ τὴν γῆν δὲ ἀλλὰ περὶ αὐτήν S

7 Ὁ ἰσοδρόμους εἶναι τὸν ἥλιον τὸν ἑωσφόρον καὶ τὸν στίλβοντα, S ταὐτὸν δὲ πεπονθέναι τῷ ἑωσφόρῳ τὸν στίλβοντα, ἰσοδραμεῖν δὲ αὐτοὺς τῷ ἡλίῳ καὶ συμπεριφέρεσθαι αὐτῷ

8 PS ἑωσφόρον, EG φωσφόρον

§ 1a 59a78 DK; § 1b–; § 1c SVF 1.507; § 2a 24A4 DK; § 2b–; § 3 T19 Gigon; § 4 12A18 DK; § 5 13A14 DK; § 6a–; § 6b–; § 7 FGH 244F91

ιζ'. Πόθεν φωτίζονται οἱ ἀστέρες

- 1 (οἱ μὲν πλεῖστοι ἴδιον αὐτοὺς ἔχειν φῶς.)<sup>1</sup>
- 2 Μητροδόωρος ἅπαντας τοὺς ἀπλανεῖς ἀστέρας<sup>2</sup> ὑπὸ τοῦ ἡλίου προοσλάμπεσθαι<sup>3</sup>.
- 3 Στράτων καὶ αὐτὸς τὰ ἄστρα ὑπὸ τοῦ ἡλίου φωτίζεσθαι.
- 4 Διότιμος Τύριος, ὁ Δημοκρίτειος<sup>4</sup>, τὴν αὐτὴν τούτοις εἰσηγέγκατο γνώμην.

1 coniecimus, vide supra

2 ἀστέρας om. P, ἅπαντας τοὺς ἀστέρας τοὺς ἀπλανεῖς G

3 καταλάμπεσθαι E

## 16. On the displacement and movement of the heavenly bodies

- 1 Anaxagoras, Democritus and Cleanthes (declare that) all the heavenly bodies move from east to west.
- 2 Alcmaeon and the astronomers (declare that) the planets move in an opposite direction to the fixed stars from west to east.
- 3 Aristotle (declares that the heavenly bodies) are moved by the spheres, on which each of them has mounted.
- 4 Anaximander (declares that the heavenly bodies) are moved by the circles and the spheres on which each of them has mounted.
- 5 Anaximenes (declares that) the heavenly bodies whirl not beneath the earth but around it.
- 6 Plato and the astronomers (declare that) the ‘dawn-bringer’ (Venus) and the ‘gleaming one’ (Mercury) run a course equal to the sun and revolve together with it; and at one time it (Venus) appears when rising as the ‘dawn-bringer’, while at another time when setting it is called the ‘evening (star)’.
- 7 Apollodorus in the second (book) of his *On the gods* (declares that) the view that the ‘light-bringer’ and the ‘evening (star)’ are the same (heavenly body) is to be ascribed to Pythagoras.

## 17. From where do the stars obtain their illumination

- 1 ⟨The majority (of philosophers declare that) they have their own light.⟩
- 2 Metrodorus (declares that) all the fixed stars are shone upon by the sun.
- 3 Strato too (declares that) the stars are illuminated by the sun.
- 4 Diotimus of Tyre, the follower of Democritus, introduced the same opinion as these men.

- 
- 4 S (testis unicus) διοκριτός; διοκριτικός conj. Heeren, Δημοκριτέιος Diels *DG* (sed in textu non posuit) Wachsmuth, Diels *VS*
- 

§ 1–; § 2 70A9 DK; § 3 fr. 85 Wehrli; § 4 76.1 DK

⟨ιζ<sup>+</sup>. Πόθεν τρέφονται οἱ ἀστέρες⟩<sup>1</sup>

- 1 Ἡράκλειτος καί<sup>2</sup> οἱ Στωικοὶ τρέφεσθαι τοὺς ἀστέρας ἐκ τῆς ἐπιγείου<sup>3</sup>  
ἀναθυμιάσεως.  
2 Ἀριστοτέλης μὴ δεῖσθαι τὰ οὐράνια τροφῆς· οὐ γὰρ φθαρτὰ ἀλλ’  
αἶδια.  
3 Πλάτων κοινῶς<sup>4</sup> ὅλον τὸν κόσμον καὶ τὰ ἄστρα ἐξ αὐτῶν<sup>5</sup> τρέφεσθαι.

- 
- 1 coniecimus, vide supra  
2 καί om. E  
3 ἀπὸ γῆς S  
4 Πλάτων οἱ Στωικοὶ ὡς P (haud dubie ex § 1)  
5 αὐτῶν P<sup>1</sup> αὐτῶν P<sup>2</sup> αὐτοῦ ESQ αὐτοῦ Diels
- 

§ 1a 22A11 DK; § 1b *SVF* 2.690; § 2 T19 Gigon; § 3–

ιη'. Περὶ τῶν<sup>1</sup> ἄστρον<sup>2</sup> τῶν καλουμένων Διοσκούρων<sup>3</sup>

- 1 Ξενοφάνης τοὺς ἐπὶ τῶν πλοίων φαινομένους οἷον ἀστέρας<sup>4</sup> νεφέλια  
εἶναι κατὰ τὴν ποιὰν κίνησιν παραλάμποντα.  
2 Μητροδόωρος τῶν ὀρώντων ὀφθαλμῶν μετὰ δέους καὶ καταπλήξεως  
εἶναι στιβηδόνας.

- 
- 1 om. P<sup>2</sup>  
2 ἀστέρων P<sup>2</sup>  
3 PQ, Περὶ τῶν καλουμένων Διοσκούρων E, Περὶ τῶν Διοσκούρων G  
4 οὗς καὶ Διοσκούρους καλοῦσί τινες add. S ipse
- 

§ 1 21A39 DK; § 2 70A10 DK

ιθ'. Περὶ ἐπισημασίας ἀστέρων<sup>1</sup>

- 1 Πλάτων τὰς ἐπισημασίας τὰς χειμερινὰς τε καὶ τὰς θερινὰς<sup>2</sup> κατὰ τὰς  
τῶν ἀστέρων<sup>3</sup> ἐπιτολάς τε καὶ δυσμὰς γίνεσθαι, ἡλίου τε καὶ σελήνης  
καὶ τῶν ἄλλων πλανητῶν καὶ ἀπλανῶν<sup>4</sup>.  
2 Ἀναξιμένης δὲ διὰ μὲν ταῦτα<sup>5</sup> μηδὲν τούτων, διὰ δὲ τὸν ἥλιον μόνον.

17a. (From where do the stars obtain their nourishment)

- 1 Heraclitus and the Stoics (declare that) the stars are nourished from the exhalation on earth.
- 2 Aristotle (declares that) the heavenly beings have no need of nourishment, for they are not perishable but everlasting.
- 3 Plato (declares that) the whole cosmos and the stars jointly obtain their nourishment from themselves.

18. On the stars that are called the Dioscuri

- 1 Xenophanes (declares that) the star-like appearances on ships are cloudlets that light up in accordance with the kind of movement that they have.
- 2 Metrodorus (declares that) they (the Dioscuri) are the flashing of eyes that gaze with fear and consternation.

19. On signs of the seasons produced by the heavenly bodies

- 1 Plato (declares that) the signs pertaining to the seasons of winter and summer occur in accordance with the risings and settings of the heavenly bodies, namely the sun and the moon and the other planets and fixed stars.
- 2 Anaximenes, however, (declares that) through these (other heavenly bodies) none of these (signs occur), but through the sun only.

- 3 Εὐδόξος Ἄρατος κοινῶς διὰ πάντας τοὺς ἀστέρας, ἐν οἷς φησιν<sup>6</sup>  
 αὐτὸς γὰρ τά γε<sup>7</sup> σήματ' ἐν οὐρανῷ ἐστήριξεν,  
 ἄστρα διακρίνας· ἐσκέψατο δ' εἰς ἐνιαυτὸν  
 ἀστέρας, οἳ κε μάλιστα τετυγμένα σημαίνουσιν<sup>8</sup>.

- 1 καὶ πῶς γίνεται χειμῶν καὶ θέρος add. P, Περί ἐπισημασίας G, 'Über die (Wetter-) Konstellationen der Jahreszeiten' Q  
 2 χειμερινάς ... θερινάς SGQ, transposuit P  
 3 PG, ἀστρον S  
 4 P, ἡλίου ... ἀπλανῶν om. SG (quos Diels sec.), πλανητῶν καὶ om. Q  
 5 ταύτην P<sup>2</sup>, i.e. lunam?  
 6 P, Εὐδόξος καὶ Ἄρατος τὰς ἐπισημασίας κατὰ τὰς τῶν ἀστρον ἐπιτολάς γίνεσθαι. λέγει γοῦν Ἄρατος ἐν τοῖς Φαινομένοις οὕτως· S  
 7 S Aratus, τάδε P  
 8 P Aratus, σημαίνουσιν S

§ 1-; § 2 13A14 DK; § 3a Eudoxus fr. F142 Lasserre; § 3b Aratus *Phaen.* 10-12

κ'. Περί οὐσίας ἡλίου<sup>1</sup>

- 1 Ἀναξίμανδρος κύκλον εἶναι ὀκτωκαιικοσαπλασίονα τῆς γῆς, ἀρμα-  
 τίου τροχῷ τὴν ἀψίδα παραπλήσιον ἔχοντα κοίλην<sup>2</sup>, πλήρη πυρός,  
 κατὰ τι μέρος<sup>3</sup> ἐκφαίνουσιν διὰ στομίου τὸ πῦρ ὥσπερ διὰ προηστῆ-  
 ρος αὐλοῦ· καὶ τοῦτ' εἶναι τὸν ἥλιον<sup>4</sup>.  
 2 Ξενοφάνης ἐκ νεφῶν πεπυρωμένων<sup>5</sup>.  
 3 Ἀναξίμενης Παρμενίδης πύρινον<sup>6</sup>.  
 4 Ἀντιφῶν πῦρ ἐπινεμόμενον μὲν τὸν περὶ τὴν γῆν ὑγρὸν ἀέρα, ἀνατο-  
 λὰς δὲ καὶ δύσεις ποιούμενον, τῷ τὸν μὲν ἐπικαιόμενον αἰεὶ προλεί-  
 πειν, τοῦ δ' ὑπονοτιζομένου πάλιν ἀντέχεσθαι.  
 5 Ξενοφάνης, (ὥς)<sup>7</sup> Θεόφραστος ἐν τοῖς Φυσικοῖς γέγραπεν, ἐκ πυρι-  
 δίων<sup>8</sup> τῶν συναθροιζομένων μὲν ἐκ τῆς ὑγρᾶς ἀναθυμιάσεως συνα-  
 θροιζόντων δὲ τὸν ἥλιον.  
 6 Ἡράκλειτος Ἑκαταῖος Κλεάνθης ἀναμμα νοερόν<sup>9</sup> ἐκ θαλάττης<sup>10</sup>.  
 7 Πλάτων ἐκ πλείστου πυρός<sup>11</sup>, μετέχειν δὲ καὶ τῶν ἄλλων σωμάτων.  
 8 Ἀναξαγόρας Δημόκριτος Μητροδόωρος μύδρον ἢ πέτρον διάπυρον.  
 9 Θαλῆς γεώδη<sup>12</sup>.  
 10 Διογένης κισσηροειδῆ<sup>12</sup>, εἰς ὃν ἀπὸ τοῦ αἰθέρος ἀκτίνες ἐναποστηρίζον-  
 ται.  
 11 Ἀριστοτέλης σφαῖραν ἐκ τοῦ πέμπτου σώματος.



- 3 Eudoxus and Aratus (declare that they occur) communally through all the heavenly bodies, in (the verses in) which he (sc. the latter) says:

For he himself (Zeus) fixed the signs in heaven,  
distinguishing the constellations; and for the year he devised  
heavenly bodies to give especially well-constructed signs.

20. On the substance of the sun

- 1 Anaximander (speaks of) a circle twenty-eight times the earth, similar to a chariot wheel with a hollow rim, filled with fire, revealing the fire in a particular part through an opening as through the nozzle of a set of bellows, and this is the sun.
- 2 Xenophanes (declares that the sun is formed) from inflamed clouds.
- 3 Anaximenes and Parmenides (declare that the substance of the sun is) fiery.
- 4 Antiphon (declares that it is) fire encroaching on the moist air near the earth, and (so) causing sunrises and sunsets, with the air always succumbing (to the sun) as it burns and resisting it again as it is slightly dampened.
- 5 Xenophanes, as Theophrastus has written in his *Physics*, (declares that the sun is formed) from firelets that are gathered together out of the moist exhalation and so gather together the sun.
- 6 Heraclitus, Hecataeus and Cleanthes (declare that the sun is) an intelligent ignited mass (formed) from the sea.
- 7 Plato (declares that it consists) of fire for the most part, but also has a share of the other elements.
- 8 Anaxagoras, Democritus and Metrodorus (declare that it is) an inflamed clump or rock.
- 9 Thales (declares that it is) earthy.
- 10 Diogenes (declares that it is) pumice-like, and that rays from the ether fix themselves into it.
- 11 Aristotle (declares that it is) a sphere (made up) of the fifth body.

- 12 Φιλόλαος ὁ Πυθαγόρειος ὕαλοειδῇ, δεχόμενον μὲν τοῦ ἐν τῷ κόσμῳ πυρὸς τὴν ἀνταύγειαν, διηθοῦντα δὲ πρὸς ἡμᾶς τό τε φῶς<sup>13</sup> καὶ τὴν ἀλέαν, ὥστε προσεοικέναι ἡλίῳ τὸ ἐν τῷ οὐρανῷ πυρῶδες τό τε δὴ ἀπ' αὐτοῦ καὶ ἐσοπτροειδές, καὶ τρίτον τὴν ἀπὸ τοῦ ἐσόπτρου κατ' ἀνάκλασιν διασπειρομένην πρὸς ἡμᾶς αὐγὴν<sup>14,15</sup>· καὶ γὰρ ταύτην προσονομάζομεν ἥλιον οἶονεῖ εἰδῶλον εἰδῶλου.
- 13 Ἐμπεδοκλῆς δύο ἡλίους, τὸν μὲν ἀρχέτυπον, πῦρ<sup>16</sup> ἐν τῷ ἑτέρῳ ἡμισφαίριῳ τοῦ κόσμου πεπληρωκὸς τὸ ἡμισφαίριον, αἰὲ καταντικρὺ τῇ ἀντανγείᾳ ἑαυτοῦ τεταγμένον· τὸν δὲ φαινόμενον ἀνταύγειαν ἐν τῷ ἑτέρῳ ἡμισφαίριῳ τῷ τοῦ ἀέρος τοῦ θερμομοιγοῦς πεπληρωμένῳ, ἀπὸ κυκλοτεροῦς τῆς γῆς<sup>17</sup> κατ' ἀνάκλασιν ἐγγιγνομένην εἰς τὸν Ὀλυμπον<sup>18</sup> τὸν κρυσταλλοειδῇ, συμπεριελκομένην δὲ τῇ κινήσει τοῦ πυρίνου· ὥς δὲ βραχέως<sup>19</sup> εἰρησθαι συντεμόντι<sup>20</sup>, ἀνταύγειαν εἶναι τοῦ περὶ τὴν γῆν πυρὸς<sup>21</sup> τὸν ἥλιον.
- 14 Ἐπίκουρος γήινον πύκνωμα κισηροειδῶς καὶ σπογγοειδῶς<sup>22</sup> ταῖς κατατρήσεσιν ὑπὸ τοῦ πυρὸς ἀνημμένον.
- 15 Παρμενίδης τὸν ἥλιον καὶ τὴν σελήνην ἐκ τοῦ γαλαξίου κύκλου ἀποκριθῆναι, τὸν μὲν ἀπὸ τοῦ ἀραιοτέρου μίγματος, ὃ δὴ θερμόν, τὴν δὲ ἀπὸ τοῦ πυκνοτέρου, ὅπερ ψυχρόν.

1 SQ, καὶ ὅτι δύο καὶ τρεῖς εἰσὶν add. P, Περί ἡλίου EG

2 κοίλῃν PG κοῖλον E, ἔχοντα κοίλῃν περιφέρειαν S

3 SEG (defuit in Q), ἥς κατὰ τι μέρος P, ἥς del. Diels Mau Lachenaud

4 αὐλοῦ ... ἥλιον om. S

5 SE, νέφος πεπρωμένον P, νέφη πεπρωμένα Q?, εἶναι τὸν ἥλιον add. S

6 ὑπάρχειν τὸν ἥλιον ἀπεφάνετο add. S

7 addidimus, ἥ ὥς conj. Usener

8 ἐκ πυριδίων μὲν τῶν συναθροιζομένων ἐκ ... S

9 τὸ inseruit S

10 Ἡράκλειτος ἀναμμία, ἐν μὲν ταῖς ἀνατολαῖς τὴν ἑξαψιν ἔχοντα, τὴν δὲ οὐβείν ταῖς

δυσομαῖς G in ultimo loco, sed desunt in PEQ

11 PGQ, πλείστον πυρὸς E, τὸ μὲν πλείστον ἔχειν ἐκ τοῦ πυρὸς T

12 τὸν ἥλιον add. S

13 τὸ φῶς P

14 ὥστε προσεοικέναι ἡλίῳ τὸ ἐν οὐρανῷ πυρῶδες τῇ ἀπὸ τοῦ ἐνόπτρου κατ' ἀνάκλασιν διασπειρομένην πρὸς ἡμᾶς αὐγῇ E

15 ὥστε ... αὐγὴν P, ὥστε τρόπον τινὰ διττοὺς ἡλίους γίνεσθαι, τό τε ἐν τῷ οὐρανῷ πυρῶδες καὶ τὸ ἀπ' αὐτοῦ πυροειδές κατὰ τὸ ἐσοπτροειδές· εἰ μὴ τις καὶ τρίτον λέξει, τὴν ἀπὸ τοῦ ἐνόπτρου κατ' ἀνάκλασιν διασπειρομένην πρὸς ἡμᾶς αὐγὴν S

16 πῦρ ὃν S

17 (αὐ)γῆς conj. Bernadakis

18 conj. Mansfeld e Q (vide supra), ἥλιον PS

19 διὰ βραχέος E

20 conj. Meineke prob. Diels, συντεμόντα PES

21 ἀνταύγειαν ... πυρὸς PS, πῦρ E

- 12 Philolaus the Pythagorean (declares that it is) glass-like, on the one hand receiving the reflection of the fire in the cosmos, on the other hand pushing the light and the heat through towards us, so that (we have) resembling the sun (first) the fiery (element) in the heaven, (second) the one derived from it and mirror-like, and third the beam spread out towards us from the mirror through reflection. For it is this which we call the sun, like an image of an image.
- 13 Empedocles (declares that there are) two suns: on the one hand (there is) the archetype, which is fire in the one hemisphere of the cosmos and fills the hemisphere, always stationed opposite its own reflection; on the other hand (there is) the visible sun, which is its reflection in the other hemisphere, namely the one filled with air mixed with heat, arising from the circular earth through a reflection onto the crystal-like Olympus (i.e. heaven), and carried around with it by the motion of the fiery (element); to sum up in a brief phrase, the sun is a reflection of the fire around the earth.
- 14 Epicurus (declares that it is) an earthy concentration inflamed by the fire in its cavities in the manner of a pumice-stone or sponge.
- 15 Parmenides (declares that) the sun and the moon have been separated off from the Milky Way, the former from the more rarefied mixture which is hot, the latter from the denser (mixture) which is cold.

22 SQ(?), κισηροειδῶς P, κισηροειδὲς καὶ σπογγοειδὲς E, γήινον κύκλωμα, κισηροειδῆ καὶ σπογγοειδῇ ταῖς κατατρήσεσιν ἐνημμένον G

§1 12A21 DK; §2 21A40 DK; §3a 13A15 DK; §3b 28A41 DK; §4 87B26 DK; §5 21A40 DK, Theophrastus fr. 232 FHS&G, Diels *Phys.Dox.* fr. 16 non recte; §6a 22A12 DK; §6b 73B9 DK; §6c *SVF* 1.501; §7–; §8a 59A72 DK; §8b 68A87 DK; §8c 70A11 DK; §9 11A17a DK; §10 64A13 DK; §11 T19 Gigon; §12 44A19 DK; §13 31A56 DK; §14 fr. 343 Usener; §15 28A43 DK

#### κα'. Περί μεγέθους ἡλίου

- 1 Ἀναξιμανδρος τὸν μὲν ἥλιον ἴσον τῇ γῇ εἶναι, τὸν δὲ κύκλον, ἀφ' οὗ τὴν ἐκπνοὴν<sup>1</sup> ἔχει καὶ ἐφ' οὗ φέρεται, ἑπτακαιικοσαπλασίονα τῆς γῆς<sup>2</sup>.
- 2 Ἐμπεδοκλῆς ἴσον τῇ γῇ τὸν κατὰ τὴν ἀνταύγειαν.
- 3 Ἀναξαγόρας πολλαπλασίονα<sup>3</sup> Πελοποννήσου<sup>4</sup>.
- 4 Ἡράκλειτος<sup>5</sup> εὖρος ποδὸς ἀνθρωπείου.
- 5 Ἐπίκουρος<sup>6</sup> τηλικούτον ἡλίκος<sup>7</sup> φαίνεται, ἢ<sup>8</sup> μικρῶ τι<sup>9</sup> μείζω ἢ ἐλάττω.

1 πνοήν E

2 τοῦ προειρημένου μεγέθους S, i.e. ut in capite priori, sed illic ὀκτωκαιικοσαπλασίονα

3 μείζονα T bis

4 πολλαπλασίον γῆς G, 'Vielfaches (Pl.) von jener (Grösse der Erde)' Q

5 'Epikuros und Herakleitos' Q

6 πάλιν φησὶν ἐνδέχεσθαι τὰ προειρημένα πάντα ἢ ins. P, secl. Diels

7 PQS, ἡλίκος καὶ ὁποῖος E, οἷος G

8 SEGP<sup>1</sup>, om. P<sup>2</sup>

9 S, τι E, om. P

§1 12A21 DK; §2 31A56 DK; §3 59A72 DK; §4 22B3 DK; §5 fr. 345 Usener

#### κβ'. Περί σχήματος ἡλίου

- 1 Ἀναξιμένης Ἀλκμαίων πλατὺν ὥς πέταλον τὸν ἥλιον<sup>1</sup>.
- 2 Ἡράκλειτος σκαφοειδῆ<sup>2</sup>, ὑπόκυρτον.
- 3 οἱ Πυθαγόρειοι οἱ Στωικοὶ σφαιροειδῆ, ὥς τὸν κόσμον καὶ τὰ ἄστρα.
- 4 Ἐπίκουρος ἐνδέχεσθαι τὰ προειρημένα πάντα.

1 τὸν ἥλιον om. E

2 φακοειδῆ G

§1a 13A15; §1b 24A4 DK; §2 22A12 DK; §3a–; *SVF* 2.654; §4 fr. 344 Usener

## 21. On the size of the sun

- 1 Anaximander (declares that) the sun is equal to the earth (in size), and that the circle out of which it has its vent and on which it moves, is 27 times the earth.
- 2 Empedocles (declares that it is) equal to the earth (in size), namely the sun (that appears) in virtue of the reflection.
- 3 Anaxagoras (declares that it is) many times larger than the Peloponnese.
- 4 Heraclitus (declares that it is) the breadth of a human foot.
- 5 Epicurus (declares that it is) the size that it appears, or a just little larger or smaller.

## 22. On the shape of the sun

- 1 Anaximenes and Alcmaeon (declare that) the sun is flat, like a leaf.
- 2 Heraclitus (declares that it is) bowl-like, somewhat convex.
- 3 The Pythagoreans and the Stoics (declare that it is) ball-like, like the cosmos and the stars.
- 4 Epicurus (declares that) all the above-mentioned (shapes) are possible.

κγ'. Περὶ τροπῶν ἡλίου

- 1 Ἀναξιμένης ὑπὸ πεπυκνωμένου ἀέρος καὶ ἀντιτύπου ἐξωθεῖσθαι τὰ ἄστρα<sup>1</sup>.
- 2 Ἀναξαγόρας ἀνταπώσσει τοῦ πρὸς ταῖς ἄρκτοις ἀέρος, ὃν αὐτὸς συνω-  
θῶν ἐκ τῆς πυκνώσεως ἰσχυροποιεῖ.
- 3 Δημόκριτος ἐκ τῆς περιφερούσης αὐτὸν δινήσεως.
- 4 Ἐμπεδοκλῆς ὑπὸ τῆς περιεχούσης αὐτὸν σφαίρας κωλύμενον ἄχρι  
παντὸς εὐθυπορεῖν καὶ ὑπὸ τῶν τροπικῶν κύκλων.
- 5 Πλάτων Πυθαγόρας Ἀριστοτέλης παρὰ<sup>2</sup> τὴν λόξωσιν τοῦ ζωδιακοῦ  
κύκλου, δι' οὗ φέρεται λοξοπορῶν ὁ ἥλιος, καὶ κατὰ δορυφορίαν τῶν  
τροπικῶν κύκλων· ταῦτα δὲ πάντα καὶ ἡ σφαῖρα δείκνυσιν.
- 6 Διογένης ὑπὸ τοῦ ἀντιπίπτοντος τῇ θερμότητι ψυχους σβέννυσθαι τὸν  
ἥλιον.
- 7 οἱ Στωικοὶ κατὰ τὸ διάστημα τῆς ὑποκειμένης τροφῆς διέρχεσθαι τὸν  
ἥλιον· ὠκεανὸς δ' ἐστὶν ἡ γῆ<sup>3</sup>, ἥς τὴν ἀναθυμίασιν ἐπινέμεται·
- 8 συγκαταφέρεσθαι δὲ τὸν ἥλιον κινούμενον ἔλικα ἐν τῇ σφαίρᾳ, ἀπὸ  
τοῦ ἰσημερινοῦ ἐπὶ τε ἄρκτου καὶ νότου, ἅπερ ἐστὶ πέρατα τῆς ἔλικος·
- 9 ἄλλοι δὲ ἐπ' εὐθείας αὐτὸν κινεῖσθαι τὴν ἔλικα οὐ περὶ σφαῖραν  
ποιοῦντα, περὶ δὲ κύλινδρον.

1 PG, ἐξωθούμενα ... τὰς τροπὰς ποιεῖσθαι S

2 περὶ P<sup>2</sup>

3 ἡ γῆ P (ἢ om. P<sup>2</sup>), ὠκεανὸς δ' ἐστὶν ἡ S, quod lacunam indicat; καὶ ἡ μεγάλη  
θάλασσα conj. Wachsmuth (cf. paraphrasin G)

§1 13A15 DK; §2 59A72 DK; §3 68A89 DK; §4 31A58 DK; §5a-; §5b-; §5c T19 Gigon;  
§6 64A13 DK; §7 *SIF* 1.508, 2.658; §8-; §9-

κδ'. Περὶ ἐκλείψεως ἡλίου

- 1 Θαλῆς πρῶτος ἔφη ἐκλείπειν τὸν ἥλιον τῆς σελήνης αὐτὸν ὑποτρεχού-  
σης<sup>1</sup> κατὰ κάθετον, οὔσης φύσει γεώδους· βλέπεσθαι δὲ τοῦτο κατο-  
πτρικῶς ὑποτιθεμένῳ τῷ δίσκῳ<sup>2</sup>.
- 2 οἱ Πυθαγόρειοι Ἐμπεδοκλῆς (ὁμοίως)<sup>3</sup>.
- 3 Ἀναξίμανδρος τοῦ στομίου τῆς τοῦ πυρὸς διεκπνοῆς ἀποκλειομένου.
- 4 Ἡράκλειτος κατὰ τὴν τοῦ σκαφοειδοῦς στροφῆν, ὥστε τὸ μὲν κοῖλον  
ἄνω γίνεσθαι τὸ δὲ κυρτὸν κάτω πρὸς τὴν ἡμετέραν ὄψιν.

## 23. On the turnings of the sun

- 1 Anaximenes (declares that) the heavenly bodies are pushed off course by condensed and resistant air.
- 2 Anaxagoras (declares that the solstices are caused) by the repulsion of the northern air, which it (the sun) by pushing makes strong as the result of the condensation (that occurs).
- 3 Democritus (declares that they are caused) as the result of the whirling that carries it (the sun) around.
- 4 Empedocles (declares that they are caused) by the sphere that surrounds it (the sun) and prevents it from continuing its course in a straight line, and by the solstitial circles.
- 5 Plato, Pythagoras and Aristotle (declare that they result) from the tilting of the zodiac circle, through which the sun moves with in an oblique course, and in virtue of the flanking of the solstitial circles. All these matters the sphere demonstrates as well.
- 6 Diogenes (declares that) the sun is quenched by the cold that collides with the heat.
- 7 The Stoics (declare that) the sun's course is determined by the distance covered in accordance with the food available to it. This is the ocean or the earth, from which it consumes the exhalation.
- 8 And the sun as it moves produces a concomitant spiral on the sphere, from the equinoctial (circle) to both the northern and the southern (tropic), which are the limits of the spiral.
- 9 But others (say) that its movement makes a spiral in a straight line by doing this not around a sphere, but around a cylinder.

## 24. On the eclipse of the sun

- 1 Thales was the first to say that the sun undergoes an eclipse when the moon with its earthy nature courses perpendicularly in between (it and the earth); this is visible by means of reflection when the disc (of a mirror) is placed beneath.
- 2 The Pythagoreans and Empedocles hold a similar view.
- 3 Anaximander (declares that the sun is eclipsed) when the mouth through which the outpouring of fire occurs is blocked.
- 4 Heraclitus (declares that it undergoes an eclipse) in accordance with the turning of its bowl-like shape, so that the hollow aspect faces upwards and the convex aspect faces downwards in the direction of our vision.

- 5 Ξενοφάνης κατὰ σβέσιν· ἕτερον δὲ πάλιν πρὸς ταῖς ἀνατολαῖς γίνε-  
σθαι· παριστόρηκε δὲ καὶ ἔκλειψιν ἡλίου ἐφ' ὅλον μῆνα καὶ πάλιν  
ἔκλειψιν ἐντελῇ, ὥστε τὴν ἡμέραν νύκτα φανῆναι.
- 6 Ἦνιοι πύκνωμα<sup>4</sup> τῶν ἀοράτως<sup>5</sup> ἐπερχομένων τῷ δίσκῳ νεφῶν.
- 7 Ἀρίσταρχος τὸν ἥλιον ἴσθησι μετὰ τῶν ἀπλανῶν, τὴν δὲ γῆν<sup>6</sup> κινεῖ  
περὶ τὸν ἡλιακὸν κύκλον καὶ κατὰ τὰς ταύτης ἐγκλίσεις σκιάζεσθαι  
τὸν δίσκον<sup>7</sup>.
- 8 Ξενοφάνης πολλοὺς εἶναι ἡλίους καὶ σελήνας κατὰ κλίματα<sup>8</sup> τῆς γῆς  
καὶ ἀποτομὰς καὶ ζώνας· κατὰ τινα δὲ καιρὸν ἐμπίπτειν τὸν δίσκον εἰς  
τινα ἀποτομὴν τῆς γῆς οὐκ οἰκουμένην<sup>9</sup> ὑφ' ἡμῶν, καὶ οὕτως ὥσπερ  
κενεμβατοῦντα ἔκλειψιν ὑποφαίνειν<sup>10</sup>. ὁ δ' αὐτὸς τὸν ἥλιον εἰς ἄπειρον  
μὲν προιέναι, δοκεῖν δὲ κυκλεῖσθαι διὰ τὴν ἀπόστασιν.

1 ὑποτρεχούσης PS, ὑπερχομένης EG

2 P, ὑποτιθεμένην E (sc. τὴν σελήνην), ὑποτιθεμένον S, ταύτην ... ὑποτιθεμένην conj.  
Wytttenbach

3 coniecimus, cf. S 1.26.2 (= ¶29.6\*)

4 πύκνωμα P<sup>1</sup>, πύκνωσιν νεφῶν P<sup>2</sup>

5 ἀοράτων E

6 σελήνην E

7 τὸν δίσκον om. S, abesse mavult Mau

8 κλίμα P

9 οἰκουμένης SE

10 ὑποφαίνειν P<sup>1</sup>ESQ, ὑπομένειν P<sup>2</sup> Diels

§1 11A17a DK; §2a–; §2b 31A59 DK; §3 12A21 DK; §4 22A12 DK; §5 21A41 DK; §6–;  
§7–; §8 21A41a DK

κε'. Περὶ οὐσίας σελήνης<sup>1</sup>

- 1 Ἀναξίμανδρος κύκλον εἶναι ἐννεακαιδεκαπλάσιον τῆς γῆς, ὅμοιον ἀρ-  
ματείῳ <τροχῷ> κοίλην ἔχοντι τὴν ἀψίδα καὶ πυρὸς πλήρη, καθάπερ  
<τὸν> τοῦ ἡλίου, κείμενον λοξόν, ὥς ἀκκεῖνον, ἔχοντα μίαν ἐκπνοήν,  
οἷον πρηστήρος αὐλόν· ἐκλείπειν δὲ κατὰ τὰς ἐπιστροφὰς τοῦ τροχοῦ<sup>2</sup>.
- 2 Ἀναξίμενης Παρμενίδης Ἡράκλειτος πυρίνην τὴν σελήνην.
- 3 Ξενοφάνης νέφος εἶναι πεπυρωμένον πεπιλημένον<sup>3</sup>.
- 4 Ποσειδώνιος [δὲ]<sup>4</sup> καὶ οἱ πλείστοι τῶν Στωικῶν<sup>5</sup> μικτὴν<sup>6</sup> ἐκ πυρὸς καὶ  
ἀέρος,
- 5 Κλεάνθης <δὲ> πυροειδῇ<sup>7</sup>.
- 6 Ἐμπεδοκλῆς ἀέρα συνεστραμμένον νεφοειδῇ, πεπηγότα ὑπὸ πυρός,  
ὥστε σύμμικτον.
- 7 Πλάτων ἐκ πλείονος τοῦ πυρώδους<sup>8</sup>.
- 8 Ἀριστοτέλης <ἐκ τοῦ πέμπτου σώματος><sup>9</sup>.



- 5 Xenophanes (declares that it undergoes an eclipse) through quenching. But another sun occurs in the east. He has recounted that there was an eclipse (i.e. failure) of the sun for an entire month, and in addition that a total eclipse took place, so that the day appeared as night.
- 6 Some (thinkers declare that it is) a condensation of clouds invisibly passing in front of the (sun's) disk.
- 7 Aristarchus makes the sun stand still together with the fixed stars, while he moves the earth in the circle of the sun and (declares that) its disk is obscured in accordance with the tiltings of this body (i.e. the earth).
- 8 Xenophanes declares that there are many suns and moons in accordance with the latitudes of the earth and its sections and zones. But at a certain moment the (sun's) disk falls into a section of the earth that is not inhabited by us, and in this way, as if stepping into the void, it appears to undergo an eclipse. The same (thinker declares that) the sun advances indefinitely, but seems to go in a circle because of the remove (away from us).

## 25. On the substance of the moon

- 1 Anaximander (declares that the moon is) a circle nineteen times the earth, resembling a chariot wheel with a hollow rim and full of fire, like the (circle) of the sun, lying tilted, as that one (i.e. of the sun) does too, with a single blowhole, like the nozzle of a set of bellows; and it undergoes eclipse in accordance with the turnings of the wheel.
- 2 Anaximenes, Parmenides and Heraclitus (declare that) the moon is fiery.
- 3 Xenophanes (declares that it is) an inflamed condensed cloud.
- 4 Posidonius and most of the Stoics (declare that it is) combined out of fire and air;
- 5 but Cleanthes (declares that it is) fire-like.
- 6 Empedocles (declares that it is) cloud-like compacted air, fixed by fire so that it forms a compound.
- 7 Plato (declares that it is formed) for the most part from fiery (material).
- 8 Aristotle (declares that it is formed) from the fifth body.

- 9 Θαλῆς γεώδη<sup>10</sup>.  
 10 Ἀναξαγόρας Δημόκριτος στερέωμα διάπυρον, ἔχον ἐν ἑαυτῷ πεδία  
 καὶ ὄρη καὶ φάραγγας.  
 11 Διογένης κισηροειδὲς ἄναμμα<sup>11</sup>.  
 12 Ἴων σῶμα τῇ μὲν ὑελοειδές, διανγές, τῇ δὲ ἀφεγγές.  
 13 Βήρωσος ἡμιπύρωτον σφαῖραν<sup>12</sup>.  
 14 Ἡρακλείδης καὶ Ὁκελλος<sup>13</sup> γῆν ὁμίχλη περιεχομένην<sup>14</sup>.  
 15 Πυθαγόρας κατοπτροειδὲς σῶμα<sup>15</sup>.

- 1 PQS, Περὶ σελήνης EG cf. Ach  
 2 ὅμοιον ... τροχοῦ S; v.l. ὥσπερ <τόν> τοῦ ἡλίου πλήρη πυρός· ἐκλείπειν δὲ κατὰ τὰς  
 ἐπιστροφάς τοῦ τροχοῦ· ὅμοιον γὰρ εἶναι ὁματίου τροχῷ κοίλην ἔχοντι τὴν ἀψίδα  
 καὶ πλήρη πυρός, ἔχοντι μίαν ἐκπορὴν P, ὅμοιον δὲ ... ἔχοντι ... πυρός πλήρη ...  
 ἔχοντα E  
 3 πεπτρωμένον P<sup>1</sup>LQGT, πεπτρωλημένον P<sup>2</sup>, πεπιλημένον P<sup>3</sup>ES, πεπτρωμένον πεπι-  
 λημένον coniecimus  
 4 δέ S, seclusimus  
 5 Ποσειδώνιος ... Στωικῶν S, οἱ Στωικοί P  
 6 μικτόν E  
 7 Κλεάνθης πυροειδῇ τὴν σελήνην S, δέ inseruimus  
 8 πυρώδους PLQ, πυρός SG, γεώδους E  
 9 σελήνην ἐν μεθορίοις ἀέρος τεταγμένην καὶ τῆς πέμπτης οὐσίας μετέχουσιν ἐν μηνί  
 περιέχεσθαι τὸν ἴδιον κύκλον S, sed veri simile ex Ario Didymo; supplevimus ex  
 2.13 (cf. 2.20)  
 10 τὴν σελήνην ἀπεφίνατο add. S ipse  
 11 τὴν σελήνην add. S  
 12 τὴν σελήνην add. S  
 13 Ἡρακλείδης καὶ Ὁκελλος S, Ἡράκλειτος P, καὶ Ὁκελλος secl. Diels  
 14 περιεχομένην ST, περιελημμένην P  
 15 κατοπτροειδὲς σῶμα S, κατὰ τὸ πυροειδὲς σῶμα PQ, κατὰ τὸ πυροειδὲς σχῆμα E,  
 πυροειδὲς σῶμα Lydus, πετρώδες σῶμα T, cf. *Sch. Arat.* κάτοπτρόν τι

§1 12A22 DK; §2a 13A16 DK; §2b 28A42 DK; §2c cf. T446 Mouraviev; §3 21A43 DK;  
 §4 F122 E.-K., *SVF* 2.671, 506; §5–; §6 31A60 DK; §7–; §8 cf. T19 Gigon; §9–; §10a  
 59A77 DK; §10b 68A90 DK; §11 64A14 DK; §12 36A7 DK; §13 *FGH* 680 F19a; §14a  
 fr. 114a Wehrli, 76 Schütrumpf; §14b T9 Harder; §15–

#### κς'. Περὶ μεγέθους σελήνης

- 1 οἱ Στωικοὶ μείζονα τῆς γῆς<sup>1</sup> ἀποφαίνονται ὥς καὶ τὸν ἥλιον.  
 2 Παρμενίδης ἴσην τῷ ἡλίῳ, καὶ γὰρ<sup>3</sup> ἀπ' αὐτοῦ φωτίζεται.  
 3 Ἀριστοτέλης ἐλάττονα τῆς γῆς,  
 4 ἄλλοι δὲ σπιθαμῆς ἔχειν διάμετρον<sup>4</sup>.

- 1 τῆς γῆς intercidit in E  
 2 PG, ἴσον E  
 3 SE, om. P  
 4 ex T, sed dubium

- 9 Thales (declares that it is) earthy.
- 10 Anaxagoras and Democritus (declare that it is) an inflamed solid mass, which has in it plains and mountains and ravines.
- 11 Diogenes (declares that it is) a sponge-like ignited mass.
- 12 Ion (declares that it is) a body that is partly glass-like and transparent, partly opaque.
- 13 Berosus (declares that it is) a half-inflamed sphere.
- 14 Heraclides and Ocellus (declare that it is) earth surrounded by mist.
- 15 Pythagoras (declares that it is) a mirror-like body.

26. On the size of the moon

- 1 The Stoics (declare that the moon is) larger than the earth, as the sun is as well.
- 2 Parmenides (declares that it is) equal to the sun (in size), and indeed that it is illuminated by it.
- 3 Aristotle (declares that it is) smaller (in size) than the earth.
- 4 But others (declare that it) has the diameter of a span.

§1 *SVF* 2.666; §2 28A42 DK; §3 T19 Gigon; §4–

κζ'. Περί σχήματος σελήνης

- 1 οἱ Στωικοὶ σφαιροειδῆ εἶναι<sup>1</sup> ὥς τὸν ἥλιον.
- 2 σχηματίζεσθαι δὲ αὐτὴν πολλαχῶς, καὶ γὰρ πανσέληνον γινομένην καὶ διχότομον καὶ ἀμφίκυρτον καὶ μηνοειδῆ.
- 3 Ἡράκλειτος σκαφοειδῆ<sup>2</sup>.
- 4 Κλεάνθης πιλοειδῆ<sup>3</sup>,
- 5 Ἐμπεδοκλῆς δισκοειδῆ<sup>4</sup>,
- 6 ἄλλοι δὲ κυλινδροειδῆ<sup>5</sup>.

1 εἶναι om. P<sup>2</sup>

2 τῷ σχήματι add. S

3 δὲ τῷ σχήματι add. S

4 δὲ τῷ σχήματι add. S

5 multa de septem lunae formis addidit G; vide supra

§1–2 *SVF* 2.667; §3 22A12 DK; §4 *SVF* 1.506; §5 31A60 DK; §6–

κη'. Περί<sup>1</sup> φωτισμῶν<sup>2</sup> σελήνης

- 1 Ἀναξίμανδρος Ξενοφάνης Βήρωσος ἴδιον αὐτὴν ἔχειν φῶς.
- 2 Ἀριστοτέλης ἴδιον μὲν, ἀραιότερον δὲ πῶς.
- 3 οἱ Στωικοὶ ἀμαυροφανές, ἀεροειδὲς γάρ.
- 4 Ἀντιφῶν ἰδιοφέγγη<sup>3</sup> τὴν σελήνην, τὸ δ' ἀποκρυπτόμενον περὶ αὐτὴν ὑπὸ τῆς προσβολῆς<sup>4</sup> τοῦ ἡλίου ἀμαυροῦσθαι, πεφυκός τοῦ ἰσχυροτέρου πυρός<sup>5</sup> τὸ ἀσθενέστερον ἀμαυροῦν ὃ δὴ συμβαίνειν<sup>6</sup> καὶ περὶ τὰ ἄλλα ἄστρα.
- 5 Θαλῆς πρῶτος ἔφη ὑπὸ τοῦ ἡλίου φωτίζεσθαι<sup>7</sup>.
- 6 Πυθαγόρας Παρμενίδης Ἐμπεδοκλῆς Ἀναξαγόρας Μητροδωρος ὁμοίως.
- 7 Ἡράκλειτος τὸ αὐτὸ πεπονθέναι τὸν ἥλιον καὶ<sup>8</sup> τὴν σελήνην· σκαφοειδεῖς γὰρ<sup>9</sup> ὄντας τοῖς σχήμασι τοὺς ἀστέρας, δεχομένους δὲ<sup>10</sup> τὰς ἀπὸ τῆς ὑγρᾶς ἀναθυμιάσεως αὐγὰς, φωτίζεσθαι πρὸς τὴν φαντασίαν, λαμπρότερος<sup>11</sup> μὲν τὸν ἥλιον, ἐν καθαρωτέρῳ γὰρ ἀέρι φέρεσθαι, τὴν δὲ σελήνην ἐν θολωτέρῳ<sup>12</sup> καὶ διὰ τοῦτο<sup>13</sup> ἀμαυροτέραν φαίνεσθαι.

1 δέ add. S

2 φωτισμοῦ G

3 ἰδίῳ φέγγει λάμπειν PE

4 τὸ δ' ἀποκρυπτόμενον ... ἀπὸ τῆς προσβολῆς E

## 27. On the shape of the moon

- 1 The Stoics (declare that the moon) is ball-like, just like the sun.
- 2 And it is shaped in many different ways, for it becomes full-moon and half-moon and gibbous and moon-like (i.e. crescent-shaped).
- 3 Heraclitus (declares that it is) bowl-like.
- 4 Cleanthes (declares that it is) cap-like.
- 5 Empedocles (declares that it is) disc-like.
- 6 But others (declare that it is) cylinder-like.

## 28. On the illuminations of the moon

- 1 Anaximander, Xenophanes and Berosus (declare that) the moon has its own light.
- 2 Aristotle (declares that it has) its own (light), but it is dimmer somehow.
- 3 The Stoics (declare that its light is) murky in appearance, for it is air-like.
- 4 Antiphon (declares that) the moon has its own gleam, and that the part of it that is hidden is dimmed by the approach of the sun, since it is natural for the stronger fire to make the weaker one dim, which indeed also occurs in the case of the other heavenly bodies.
- 5 Thales was the first to say that it is illuminated by the sun.
- 6 Pythagoras, Parmenides, Empedocles, Anaxagoras and Metrodorus (declare) likewise.
- 7 Heraclitus (declares that) the sun and the moon undergo the same experience: since they are heavenly bodies that are bowl-like in their shapes and receive their radiance from the moist exhalation, they light up in their appearance (to us), the sun doing so more brightly because it moves in air that is purer, whereas the moon moves in murkier (air) and for this reason appears dimmer.

- 5 ἰσχυροτέρου S, ἰσχυροτέρου πυρός P<sup>1</sup>E, ἰσχυροτέρου φωτός P<sup>2</sup>  
 6 συμβαίνει SE, συμβαίνει P  
 7 S, Θαλῆς καὶ οἱ ἀπ' αὐτοῦ ὑπὸ τοῦ ἡλίου φωτίζεσθαι τὴν σελήνην PEQ, Θαλῆς δὲ  
 ... G  
 8 τε καὶ S  
 9 δέ S  
 10 δέ om. S  
 11 λαμπρότερον PE  
 12 θολερῶ E  
 13 διὰ τοῦτο καὶ P

§ 1a 12A22; § 1b 21A43 DK; § 1c FGH 68o F19b; § 2 T19 Gigon; § 3 SVF 2.67o; § 4 87B27 DK; § 5-; § 6a-; § 6b 28A42 DK; § 6c 31A6o DK; § 6d 59A77 DK; § 6e 7oA12 DK; § 7 22A12 DK

κθ'. Περί<sup>1</sup> ἐκλείψεως σελήνης

- 1 Ἀναξίμανδρος<sup>2</sup> τοῦ στομίου τοῦ περὶ τὸν τροχὸν ἐπιφραττομένου.  
 2 Βήρωσος<sup>3</sup> κατὰ τὴν πρὸς ἡμᾶς ἐπιστροφὴν τοῦ ἀπυρώτου<sup>4</sup> μέρους.  
 3 Ἀλκμαίων Ἡράκλειτος Ἀντιφῶν<sup>5</sup> κατὰ τὴν τοῦ σκαφοειδοῦς στροφὴν  
 καὶ τὰς περικλίσεις<sup>6</sup>.  
 4 τῶν Πυθαγορείων τινὲς κατὰ τὴν Ἀριστοτέλειον ἱστορίαν καὶ τὴν  
 Φιλίππου τοῦ Ὀπουντίου ἀπόφασιν ἀνταυγεία καὶ ἐπιφράξει<sup>7</sup> τοτὲ μὲν  
 τῆς γῆς τοτὲ δὲ τῆς ἀντίχθονος<sup>8</sup>.  
 5 τῶν δὲ νεωτέρων<sup>9</sup> εἰσὶ τινες οἷς ἔδοξε κατ' ἐπινέμησιν φλογὸς<sup>10</sup> κατὰ  
 μικρὸν ἑξαπτομένης τεταγμένης, ἕως ἂν τὴν τελείαν πανσέληνον ἀπο-  
 δῶ, καὶ πάλιν ἀναλόγως μειουμένης μέχρι τῆς συνόδου, καθ' ἣν τελεί-  
 ως σβέννυται.  
 6 Ξενοφάνης καὶ τὴν μηνιαίαν ἀπόκρυψιν κατὰ σβέσιν.  
 7 Θαλῆς Ἀναξαγόρας<sup>11</sup> Πλάτων Ἀριστοτέλης<sup>12</sup> οἱ Στωικοὶ οἱ μαθημα-  
 τικοὶ συμφώνως<sup>13</sup> τὰς μὲν μηνιαίους ἀποκρύψεις συνοδεύουσιν αὐτὴν  
 ἡλίῳ καὶ περιλαμπομένην ποιεῖσθαι<sup>14</sup>, τὰς δ' ἐκλείψεις εἰς τὸ σκίασμα  
 τῆς γῆς ἐμπίπτουσιν, μεταξὺ μὲν ἀμφοτέρων τῶν ἀστέρων γινομένης,  
 μᾶλλον δὲ τῆς σελήνης ἀντιφραττομένης<sup>15</sup>.  
 8 Ἀναξαγόρας, ὥς φησι Θεόφραστος, καὶ τῶν<sup>16</sup> ὑποκάτω τῆς σελήνης  
 ἔσθ' ὅτε σωμάτων ἐπιπροσθούτων.

- 1 δέ add. S  
 2 Ἀναξίμανδρος SP<sup>1</sup>EQG, Ἀναξιμένης P<sup>2</sup>  
 3 om. E  
 4 πυρώδους E  
 5 Ἀντίφαντος S, corr. Heeren  
 6 S, συστροφὴν P, στροφὴν E  
 7 ἀνταυγεία καὶ ἐπιφράξει P, ἀνταύγειαν καὶ ἐπίφραξιν E, ἀντιφράξει S (cf. Q), κατ'  
 ἀνταύγειαν καὶ ἀντίφραξιν G

## 29. On the moon's eclipse

- 1 Anaximander (declares that the moon is eclipsed) when the mouth on the wheel (of fire) is obstructed.
- 2 Berossus (declares that it is eclipsed) in accordance with the turning of the uninflamed part (of the moon) towards us.
- 3 Alcmaeon, Heraclitus and Antiphon (declare that it is eclipsed) in accordance with the turning of the bowl-like (shape of the moon) and its lateral motions.
- 4 Some of the Pythagoreans according to the research of Aristotle and the assertion of Philip of Opus (declare that it is eclipsed) through reflection and obstruction sometimes of the earth and sometimes of the counter-earth.
- 5 But there are some of the younger (members of the school), in whose opinion (an eclipse takes place) in accordance with the dissemination of a flame that slowly catches alight in an orderly manner, until it produces the complete full moon, and (then) analogously diminishes again until the conjunction (with the sun), when it is completely extinguished.
- 6 Xenophanes (declares that) the monthly concealment too (takes place) by quenching.
- 7 Thales, Anaxagoras, Plato, Aristotle, the Stoics and the astronomers agree in unison that it (the moon) produces the monthly concealments by travelling together with the sun and being illuminated by it, whereas it produces the eclipses by descending into the shadow of the earth which interposes itself between the two heavenly bodies, or rather when the moon is obstructed (by the earth).
- 8 Anaxagoras, as Theophrastus states, (declares that it is eclipsed) also when it happens that bodies (in the space) below the moon interpose themselves.

- 8 τῆς γῆς ἢ τῆς ἀντίχθονος E (τε ... καί G)  
 9 τῶν δὲ μεθ' ἑτέρων ... codd. S, corr. Canter, οἱ δὲ νεώτεροι PEQ  
 10 φωτός E  
 11 Θαλῆς Ἀναξαγόρας om. P  
 12 Ἀριστοτέλης om. S  
 13 συμφωνοῦσι E  
 14 'und dadurch, daß das von ihm Erleuchtete der Sonne gegenübersteht' add. Q  
 15 μᾶλλον δὲ τῆς σελήνης ἀντιφραττομένης crucem adfixerunt Diels (qui proposuit ἥλιον δὲ ...) Mau, sed sanum acceperunt Bernadakis Mras Torracca Lachenaud  
 16 τινῶν conj. Usener

§1 12A22 DK; §2 FGH 680 F19c; §3a 24A4 DK; §3b 22A12 DK; §3c 87B28 DK; §4-5 58B36 DK; §6 21A43 DK; §7a-; §7b 59A77 DK; §7c-; §7d-; §7e SVF 2.676; §7f-; §8 59A77 DK, fr. 236 FHS&G

λ'. Περί ἐμφάσεως αὐτῆς καὶ διὰ τί γεώδης φαίνεται<sup>1</sup>

- 1 τῶν Πυθαγορείων τινὲς μὲν, ὧν ἔστι Φιλόλαος<sup>2</sup>, τὸ γεωφανὲς αὐτῆς εἶναι<sup>3</sup> διὰ τὸ περιοικεῖσθαι τὴν σελήνην<sup>4</sup> καθάπερ τὴν παρ' ἡμῖν γῆν μείζοσι ζώοις καὶ φυτοῖς καλλίοσιν· εἶναι γὰρ πεντεκαίδεκαπλασίονα τὰ ἐπ' αὐτῆς ζῶα τῇ δυνάμει μηδὲν περιττωματικὸν ἀποκρίνοντα, καὶ τὴν ἡμέραν τοσαύτην τῷ μήκει.  
 2 ἄλλοι δὲ τὴν ἐν τῇ σελήνῃ ἔμφασιν ἀνάκλασιν εἶναι τῆς πέραν τοῦ διακεκαυμένου κύκλου τῆς οἰκουμένης ὑφ' ἡμῶν θαλάττης.  
 3 Ἀναξαγόρας ἀνωμαλότητα τοῦ συγκρίματος<sup>5</sup> διὰ τὸ ψυχρομιγὲς<sup>6</sup> ἅμα καὶ γεῶδες, τὰ μὲν ἐχούσης ὑψηλά, τὰ δὲ ταπεινά, τὰ δὲ κοῖλα· καὶ παραμεμῖχθαι<sup>7</sup> τῷ πυροειδεῖ τὸ ζοφῶδες, ὧν τὸ πάθος ὑποφαίνει τὸ σκιερὸν<sup>8</sup>. ὅθεν ψευδοφανῇ<sup>9</sup> λέγεσθαι τὸν ἀστέρα.  
 4 Δημόκριτος ἀποσκιάσματα<sup>10</sup> τῶν ὑψηλῶν ἐν αὐτῇ μερῶν· ἄγκη γὰρ αὐτὴν ἔχειν καὶ νάπας.  
 5 Παρμενίδης διὰ τὸ παραμεμῖχθαι τῷ περὶ αὐτὴν πυρῶδεϊ τὸ ζοφῶδες· ὅθεν ψευδοφανῇ<sup>11</sup> λέγεσθαι τὸν ἀστέρα.  
 6 οἱ Στωικοὶ διὰ τὸ ἀερομιγὲς<sup>12</sup> τῆς οὐσίας μὴ εἶναι αὐτῆς ἀκήρατον τὸ σύγκριμα.  
 7 Ἀριστοτέλης μὴ εἶναι αὐτῆς ἀκήρατον τὸ σύγκριμα διὰ τὰ πρόσγεια ἀερώματα τοῦ αἰθέρος, ὃν προσαγορεύει σῶμα πέμπτον.  
 8 οἱ ἀπὸ τῶν μαθηματικῶν τὸ ἀνώμαλον συγκριτικὸν αἰτιῶνται. καθάπερ οὖν τῶν προσαναγχομένων ὑπὸ τοῦ ἡλίου νεφῶν τὰ μὲν ἀραιότερα μέρη λαμπρότερα φαίνεσθαι, τὰ δὲ πυκνότερα ἀμαυρότερα, οὕτως καὶ τῆς σελήνης οἰκυίας μὲν νεφελοειδεῖ πηλήματι, προσαναγχομένης δ' ὑπὸ τοῦ ἡλίου.  
 9 Ξενοφάνης τὸν μὲν ἥλιον χρήσιμον εἶναι πρὸς τὴν τοῦ κόσμου καὶ τὴν τῶν ἐν αὐτῷ ζώων γένεσιν τε καὶ διοίκησιν, τὴν δὲ σελήνην παρέλκειν.



30. On its appearance and why it appears (to be) earthy

- 1 Some of the Pythagoreans, of whom Philolaus is one, declare that its earthy appearance is caused by the fact that the moon is inhabited, just like our earth, (but) with animals and plants that are larger and more beautiful. For (they say that) the animals on it are fifteen-fold in power and do not discharge any excrement, and that the day is the same in length (i.e. fifteen-fold).
- 2 But others (declare that) the appearance in the moon is a reflection of the sea beyond the circle of the Torrid zone of our inhabited world.
- 3 Anaxagoras (declares that it is caused by) unevenness of its composition on account of cold being mixed in together with the earthy (component), the moon having some parts that are high, others that are low, and others that are hollow. Moreover, (he declares that) the dark (component) has been mixed in with the fire-like (component), the effect of which causes the shadowy (colouring) to appear; for this reason the heavenly body is called 'falsely appearing'.
- 4 Democritus (declares that it is caused by) the shadow effects of the high areas in it; for it has glens and vales.
- 5 Parmenides (declares that it occurs) on account of the dark (component) having been mixed in with the fire-like (component) in it; for this reason the heavenly body is called 'falsely appearing'.
- 6 The Stoics (declare that) on account of the air mixed in the substance its composition is not unblemished.
- 7 Aristotle (declares that) its composition is not unblemished because the ether, which he calls the fifth body, becomes aerated close to the earth.
- 8 Some astronomers regard its compositional unevenness as the cause. Just as in the case of clouds illuminated by the sun the thinner parts are brighter and the thicker parts are darker, so it happens in the case of the moon, which resembles a cloud-like compressed body and is illuminated by the sun.
- 9 Xenophanes (declares that) the sun is useful for the generation and administration of the cosmos and the living beings in it, but the moon is redundant.

- 
- 1 EQP<sup>2</sup>, Περι ἐμφάσεως αὐτῆς, διὰ τί γεώδης φαίνεται P<sup>1</sup>, Περι δὲ ἐμφάσεως αὐτῆς S,  
 2 διὰ τί γεώδης φαίνεται ἡ σελήνη G  
 3 S, οἱ Πυθαγόρειοι P  
 4 τὸ γεωφανὲς αὐτῆς εἶναι S, γεώδη φαίνεσθαι τὴν σελήνην P  
 5 τὴν σελήνην S, αὐτὴν P  
 6 διὰ τοῦ συγκρίματος P, συγκρίματος S  
 7 ψυχροειδὲς E  
 8 παραμιγῆσθαι γὰρ PE  
 9 ὅν τὸ πάθος ὑποφαίνει τὸ σκιερὸν om. P  
 10 SP<sup>2</sup>, ψευδοφαῖ P<sup>1</sup>EQ malunt Mau Lachenaud  
 11 ἀποσκόσια τι Canter, accep. Wachsmuth  
 12 S, ψευδοφαῖ emend. Meineke  
 13 ἀερομιγῆς SEQ, ἑτεροειδὲς P
- 

§1 44A20 DK; §2-; §3 59A77 DK; §4 68A90 DK; §5 28B21 DK; §6 *SIF* 2.66g; §7 T19 Gigon; §8-; §9 21A42 DK

λα'. Περι ἀποστημάτων τῆς σελήνης<sup>1</sup>

- 1 Ἐμπεδοκλῆς διπλάσιον ἀπέχειν τὴν σελήνην ἀπὸ τοῦ ἡλίου ἥπερ ἀπὸ  
 2 τῆς γῆς<sup>2</sup>.  
 3 οἱ δὲ<sup>3</sup> ἀπὸ τῶν μαθηματικῶν ὀκτωκαιδεκαπλάσιον.  
 4 Ἐρατοσθένης τὸν ἥλιον ἀπέχειν τῆς γῆς σταδίων μυριάδας τετρα-  
 5 κοσίας καὶ ὀκτακισμυρίας<sup>4</sup>, τὴν δὲ σελήνην ἀπέχειν τῆς γῆς μυριάδας  
 6 ἑβδομήκοντα ὀκτώ.  
 7 Ἐμπεδοκλῆς τοῦ ὕψους τοῦ ἀπὸ τῆς γῆς εἰς τὸν<sup>5</sup> οὐρανόν, ἥτις ἐστὶν  
 8 ἀφ' ἡμῶν ἀνάτασις, πλείονα εἶναι τὴν κατὰ τὸ πλάτος διάστασιν, κατὰ  
 9 τοῦτο τοῦ οὐρανοῦ μᾶλλον ἀναπεπταμένου διὰ τὸ ὥφ' παραπλησίως  
 10 τὸν κόσμον κείσθαι.  
 11 Βόηθος δὲ πρὸς τὴν φαντασίαν δέχεται τὸ ἀναπεπταμένον, οὐ κατὰ  
 12 τὴν ὑπόστασιν.

- 
- 1 GQ, Περι τῶν ἀποστημάτων τῆς σελήνης, πόσον ἀφέστηκε τοῦ ἡλίου P, Περι τῶν  
 2 ἀποστημάτων αὐτῆς E, Περι δὲ τῶν ἀποστημάτων S  
 3 P, τῆς σελήνης ἀπὸ γῆς ἥπερ ἀπὸ τοῦ ἡλίου S, τὴν σελήνην ἀπὸ τῆς γῆς Sch ad Ptol.  
 4 SSch, omit. PEG  
 5 σταδίων μυριάδας μυριάδων τετρασκόσιας καὶ στάδια ὀκτάκις μύρια S, σταδίων  
 6 μυριάδας τρεῖς καὶ στάδια ὀκτάκις μυριάδας G, et vide supra  
 7 S mss. οἶον, corr. Diels
- 

§1 31A61 DK; §2-; §3-; §4 31A50 DK; §5 *SIF* fr.9

## 31. On the distances of the moon

- 1 Empedocles (declares that) the moon is double the distance from the sun that it is from the earth.
- 2 But some astronomers (declare that it is) eighteen times.
- 3 Eratosthenes (declares that) the sun is distant four hundred and eight myriads of stades from the earth, and that the moon is distant seventy-eight myriads (of stades) from the earth.
- 4 Empedocles (declares that) the distension (of the heaven) in its breadth is greater than the height from the earth to heaven, which is its extension from us, the increased spreading out of the heaven having occurred for the reason that the cosmos is lying (on its side) in a manner similar to an egg.
- 5 But Boethus understands the spreading out as a matter of appearance, not of reality.

λβ'. Περὶ ἐνιαυτοῦ, πόσος ἐκάστου τῶν πλανητῶν χρόνος, καὶ τίς ὁ μέγας ἐνιαυτός<sup>1</sup>

- 1 ἐνιαυτός ἐστι Κρόνου μὲν ἐνιαυτῶν περίοδος τριάκοντα, Διὸς δὲ δώδεκα, Ἄρεος δυεῖν, Ἡλίου δώδεκα μῆνες· οἱ δ' αὐτοὶ Ἑρμοῦ καὶ Ἀφροδίτης, ἰσόδρομοι γάρ· σελήνης ἡμέραι τριάκοντα· οὗτος γὰρ ὁ τέλειος μὴν ἀπὸ φάσεως<sup>2</sup> εἰς σύνοδον.
- 2 γίνεσθαι δὲ τὸν λεγόμενον μέγαν ἐνιαυτόν, ὅταν ἐπὶ τοὺς ἀφ' ὧν ἤρξαντο τῆς κινήσεως ἀφίκωνται τόπους.
- 3 τὸν δὲ γε<sup>3</sup> μέγαν ἐνιαυτόν οἱ μὲν ἐν τῇ ὀκταετηρίδι τίθενται,
- 4 οἱ δ' ἐν τῇ ἐννεακαιδεκαετηρίδι,
- 5 οἱ δ' ἐν τοῖς τετραπλασίοις ἔτεσιν,
- 6 οἱ δ' ἐν τοῖς ἐξήκοντα ἐνὸς δέουσιν<sup>4</sup>, ἐν οἷς Οἰνοπίδης καὶ Πυθαγόρας·
- 7 οἱ δ' ἐν τῇ λεγομένῃ κεφαλῇ τοῦ Κρόνου<sup>5</sup>, αὕτη δ' ἐστὶ τῶν ἑπτὰ πλανητῶν ἐπὶ ταύτῃ ἡμέρᾳ τῆς ἐξ ἄρκτου<sup>6</sup> φοράς ἐπάνοδος.
- 8 Ἡράκλειτος ἐκ μυρίων ὀκτακισχιλίων ἡλιακῶν.
- 9 Διογένης ὁ Στωικὸς ἐκ πέντε καὶ ἐξήκοντα καὶ τριακοσίων ἐνιαυτῶν τοσοῦτων ὅσων<sup>7</sup> ὁ κατὰ Ἡράκλειτον ἐνιαυτός.
- 10 ἄλλοι δὲ δι' ἑπτακισχιλίων ἑπτακοσίων ἐβδομήκοντα ἑπτὰ<sup>8</sup>.

1 P, 'Über die Jahre, wie lange die Zeit jedes einzelnen von den Planeten währt und was das ganz große Jahr ist' Q, Περὶ ἐνιαυτῶν E, Περὶ ἐνιαυτοῦ G

2 ἀπὸ φάσεως E

3 γε S, om. P

4 ἐνὸς δέουσιν om. S

5 χρόνου conj. Taylor

6 ἐξ ἀρχῆς conj. Taylor

7 ὅσος ἦν S

8 lemma deest in SEG

32. On the year, how great the time of (the revolution of) each of the planets is, and what the Great year is
- 1 A year for Saturn is a period of thirty years, but for Jupiter it is twelve (years), for Mars two (years), for the Sun twelve months; and the same (months are the period) for Mercury and Venus, for they move at the same speed. (The time period) of the moon is thirty days, for this is the complete month from its appearance to the conjunction (with the sun).
  - 2 But (they declare that) the so-called Great year occurs whenever (the planets) reach the locations from which they commenced their motion.
  - 3 And as far as the Great year is concerned, some (thinkers) place it in the eighth year,
  - 4 others in the nineteenth year,
  - 5 others in the years that are a fourfold (i.e. in the 76th year),
  - 6 yet others in the 59th year, among whom are Oenopides and Pythagoras.
  - 7 But there are others (who place it) in the so-called Head of Saturn, and this is the return of the seven planets on the same day of their movement from the North.
  - 8 Heraclitus (declares that the Great year consists) of eighteen thousand solar years.
  - 9 Diogenes the Stoic (declares that the Great year consists) of 365 years times what the (Great) year is according to Heraclitus.
  - 10 But others (declare that the Great year occurs) every 7777 (years).



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